

## SEQUENCE LISTING

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 Hirata, Yuichi

<120> ANTI-MPL ANTIBODIES

<130> 14875-153US1

<150> PCT/JP2004/018506

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<150> JP 2003-415746

<151> 2003-12-12

<150> JP 2004-71763

<151> 2004-03-12

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<151> 2004-08-27

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 caggttcagc tgcagcagtc tggacctgag ctggtgaagc ctggggcctc agtgaagatt 60  
 tcctgcaagg cttctggcta tgcattcact aactcctgga tgaactgggt gaagcagagg 120  
 cctggaaagg gtcttgagtg gattggacgg atttacctg gagatggaga aactatctac 180  
 aatgggaaat tcagggtcaa ggccacactg actgcagaca aatcctccag cacagcctac 240  
 atggatatca gcagcctgac atctgaggac tctgcggtct acttctgtgc aagaggctat 300  
 gatgattact cgtttgctta ctggggccaa gggactctgg tcaactgtctc tgca 354

<210> 118  
 <211> 118  
 <212> PRT  
 <213> Mus musculus

<400> 118

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Ser  
 20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe  
 50 55 60

Arg Val Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
 65 70 75 80

Met Asp Ile Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
 115

<210> 119

<211> 336

<212> DNA

<213> Mus musculus

<400> 119

gatattgtga tgactcaggc tgcaccctct atacctgtca ctctggaga gtcagtatcc 60

atctcctgta ggtctagtaa gagtctcctg catagtaatg gcaacactta cttgtattgg 120

ttcctgcaga ggccaggcca gtctcctcaa ctctgatat atcggatgtc caaccttgcc 180

tcaggagtcc cagatagggt cagtggcagt gggtcaggaa ctgctttcac actgagaatc 240

agtagagtgg aggctgagga tgtgggtgtt tattactgta tgcaacatat agaatacct 300

tttacgttcg gatcggggac caagctggaa ataaaa 336

<210> 120

<211> 112

<212> PRT

<213> Mus musculus

<400> 120

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Ile Glu Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 121

<211> 762

<212> DNA

<213> Mus musculus

<400> 121

atggaatggc ctttgatcct tctcttcctc ctgtcaggaa ctgcaggtgt ccaactcccag 60  
 gttcagctgc agcagtctgg acctgagctg gtgaagcctg gggcctcagt gaagatttcc 120  
 tgcaaggctt ctggctatgc attcactaac tcctggatga actgggtgaa gcagaggcct 180  
 ggaaagggtc ttgagtggat tggacggatt tatcctggag atggagaaac tatctacaat 240  
 gggaaattca gggcaaggc cacactgact gcagacaaat cctccagcac agcctacatg 300  
 gatatcagca gcctgacatc tgaggactct gcggtctact tctgtgcaag aggctatgat 360  
 gattactcgt ttgcttactg gggccaaggg actctgggtca ctgtctctgc aggtgggtgg 420  
 ggttcggata ttgtgatgac tcaggctgca ccctctatac ctgtcactcc tggagagtca 480  
 gtatccatct cctgtaggtc tagtaagagt ctctgcata gtaatggcaa cacttacttg 540  
 tattggttcc tgcagaggcc aggccagtct cctcaactcc tgatatatcg gatgtccaac 600  
 cttgcctcag gagtcccaga taggttcagt ggcagtgggt caggaactgc tttcacactg 660  
 agaatcagta gagtggaggc tgaggatgtg ggtgtttatt actgtatgca acatatagaa 720  
 taccctttta cgttcggatc ggggaccaag ctggaataa aa 762

<210> 122

<211> 254

<212> PRT

<213> Mus musculus

<400> 122

Met Glu Trp Pro Leu Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly  
 1 5 10 15  
 Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys  
 20 25 30  
 Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe  
 35 40 45  
 Thr Asn Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu  
 50 55 60  
 Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn  
 65 70 75 80  
 Gly Lys Phe Arg Val Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser  
 85 90 95  
 Thr Ala Tyr Met Asp Ile Ser Ser Leu Thr Ser Glu Asp Ser Ala Val  
 100 105 110  
 Tyr Phe Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly  
 115 120 125  
 Gln Gly Thr Leu Val Thr Val Ser Ala Gly Gly Gly Gly Ser Asp Ile  
 130 135 140  
 Val Met Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly Glu Ser  
 145 150 155 160  
 Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser Asn Gly  
 165 170 175  
 Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser Pro Gln  
 180 185 190  
 Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro Asp Arg  
 195 200 205  
 Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile Ser Arg  
 210 215 220

Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Ile Glu  
 225 230 235 240

Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 245 250

<210> 123  
 <211> 635  
 <212> PRT  
 <213> Homo sapiens

<400> 123

Met Pro Ser Trp Ala Leu Phe Met Val Thr Ser Cys Leu Leu Leu Ala  
 1 5 10 15

Pro Gln Asn Leu Ala Gln Val Ser Ser Gln Asp Val Ser Leu Leu Ala  
 20 25 30

Ser Asp Ser Glu Pro Leu Lys Cys Phe Ser Arg Thr Phe Glu Asp Leu  
 35 40 45

Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly Thr Tyr Gln  
 50 55 60

Leu Leu Tyr Ala Tyr Pro Arg Glu Lys Pro Arg Ala Cys Pro Leu Ser  
 65 70 75 80

Ser Gln Ser Met Pro His Phe Gly Thr Arg Tyr Val Cys Gln Phe Pro  
 85 90 95

Asp Gln Glu Glu Val Arg Leu Phe Phe Pro Leu His Leu Trp Val Lys  
 100 105 110

Asn Val Phe Leu Asn Gln Thr Arg Thr Gln Arg Val Leu Phe Val Asp  
 115 120 125

Ser Val Gly Leu Pro Ala Pro Pro Ser Ile Ile Lys Ala Met Gly Gly  
 130 135 140

Ser Gln Pro Gly Glu Leu Gln Ile Ser Trp Glu Glu Pro Ala Pro Glu  
 145 150 155 160

Ile Ser Asp Phe Leu Arg Tyr Glu Leu Arg Tyr Gly Pro Arg Asp Pro  
 165 170 175



Lys Asn Ser Thr Gly Pro Thr Val Ile Gln Leu Ile Ala Thr Glu Thr  
 180 185 190

Cys Cys Pro Ala Leu Gln Arg Pro His Ser Ala Ser Ala Leu Asp Gln  
 195 200 205

Ser Pro Cys Ala Gln Pro Thr Met Pro Trp Gln Asp Gly Pro Lys Gln  
 210 215 220

Thr Ser Pro Ser Arg Glu Ala Ser Ala Leu Thr Ala Glu Gly Gly Ser  
 225 230 235 240

Cys Leu Ile Ser Gly Leu Gln Pro Gly Asn Ser Tyr Trp Leu Gln Leu  
 245 250 255

Arg Ser Glu Pro Asp Gly Ile Ser Leu Gly Gly Ser Trp Gly Ser Trp  
 260 265 270

Ser Leu Pro Val Thr Val Asp Leu Pro Gly Asp Ala Val Ala Leu Gly  
 275 280 285

Leu Gln Cys Phe Thr Leu Asp Leu Lys Asn Val Thr Cys Gln Trp Gln  
 290 295 300

Gln Gln Asp His Ala Ser Ser Gln Gly Phe Phe Tyr His Ser Arg Ala  
 305 310 315 320

Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asn Cys Glu Glu  
 325 330 335

Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe Ser Arg Cys  
 340 345 350

His Phe Lys Ser Arg Asn Asp Ser Ile Ile His Ile Leu Val Glu Val  
 355 360 365

Thr Thr Ala Pro Gly Thr Val His Ser Tyr Leu Gly Ser Pro Phe Trp  
 370 375 380

Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His Trp Arg Glu  
 385 390 395 400

Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro Ser Ser Trp  
 405 410 415

Ala Ala Gln Glu Thr Cys Tyr Gln Leu Arg Tyr Thr Gly Glu Gly His  
 420 425 430

Gln Asp Trp Lys Val Leu Glu Pro Pro Leu Gly Ala Arg Gly Gly Thr  
 435 440 445

Leu Glu Leu Arg Pro Arg Ser Arg Tyr Arg Leu Gln Leu Arg Ala Arg  
 450 455 460

Leu Asn Gly Pro Thr Tyr Gln Gly Pro Trp Ser Ser Trp Ser Asp Pro  
 465 470 475 480

Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr  
 485 490 495

Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu  
 500 505 510

Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu  
 515 520 525

Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg  
 530 535 540

Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys  
 545 550 555 560

Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu  
 565 570 575

Arg Thr Pro Leu Pro Leu Cys Ser Ser Gln Ala Gln Met Asp Tyr Arg  
 580 585 590

Arg Leu Gln Pro Ser Cys Leu Gly Thr Met Pro Leu Ser Val Cys Pro  
 595 600 605

Pro Met Ala Glu Ser Gly Ser Cys Cys Thr Thr His Ile Ala Asn His  
 610 615 620

Ser Tyr Leu Pro Leu Ser Tyr Trp Gln Gln Pro  
 625 630 635

<210> 124  
 <211> 122  
 <212> PRT  
 <213> Mus musculus

<400> 124

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Ser Ser  
 20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Thr Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Gly Trp Ile Leu Ala Asp Gly Gly Tyr Ser Phe Ala Tyr Trp  
 100 105 110

Gly Gln Gly Thr Leu Val Thr Val Ser Ala  
 115 120

<210> 125  
 <211> 112  
 <212> PRT  
 <213> Mus musculus

<400> 125

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Ile Tyr Tyr Cys Met Gln His  
 85 90 95

Leu Glu Tyr Pro Phe Thr Phe Gly Thr Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 126

<211> 118

<212> PRT

<213> Mus musculus

<400> 126

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Ser Ser  
 20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
 65 70 75 80

Ile Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Gly Tyr Ala Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
115

<210> 127  
<211> 112  
<212> PRT  
<213> Mus musculus

<400> 127

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
100 105 110

<210> 128  
<211> 118  
<212> PRT  
<213> Mus musculus

<400> 128

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Ser Ser  
20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Asn Tyr Asn Gly Lys Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Asn Thr Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Gly Phe Gly Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
 115

<210> 129

<211> 112

<212> PRT

<213> Mus musculus

<400> 129

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Ala Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Thr Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 130  
 <211> 118  
 <212> PRT  
 <213> Mus musculus

<400> 130

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ser Ser Ser  
 20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Ser Gly Tyr Ala Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
 115

<210> 131  
 <211> 112  
 <212> PRT  
 <213> Mus musculus

<400> 131

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 132

<211> 118

<212> PRT

<213> Mus musculus

<400> 132

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Arg Ser  
 20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Ser Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
 115

<210> 133



<211> 112  
 <212> PRT  
 <213> Mus musculus

<400> 133

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
 1                   5                   10                   15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
           20                   25                   30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
           35                   40                   45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
           50                   55                   60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
 65                   70                   75                   80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
           85                   90                   95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
           100                   105                   110

<210> 134  
 <211> 118  
 <212> PRT  
 <213> Mus musculus

<400> 134

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1                   5                   10                   15

Ser Val Lys Ile Ser Cys Arg Ala Phe Gly Tyr Ala Phe Ser Asn Ser  
           20                   25                   30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
           35                   40                   45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Asn Asn Asn Gly Lys Phe  
           50                   55                   60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Gly Tyr Gly Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
100 105 110

Leu Val Thr Val Ser Ala  
115

<210> 135

<211> 112

<212> PRT

<213> Mus musculus

<400> 135

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Ala Ala Phe Thr Leu Arg Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
100 105 110

<210> 136

<211> 115

<212> PRT

<213> Mus musculus

<400> 136

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Tyr  
 20 25 30

Trp Val Asn Trp Val Lys Gln Arg Pro Gly Arg Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile His Pro Ser Asp Ser Glu Thr His Cys Asn Gln Lys Phe  
 50 55 60

Lys Arg Lys Ala Thr Leu Thr Val Asn Lys Ser Ser Ser Thr Ala Tyr  
 65 70 75 80

Ile Gln Leu His Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95

Thr Ser Gly Gly Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr  
 100 105 110

Val Ser Ala  
 115

<210> 137

<211> 112

<212> PRT

<213> Mus musculus

<400> 137

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Tyr Ser  
 20 25 30

Asn Gly Asn Ile Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile



Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Ala Ala Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 140

<211> 118

<212> PRT

<213> Mus musculus

<400> 140

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Thr Ser  
 20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Ala Asn Tyr Asn Gly Lys Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Ser Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Gly Tyr Gly Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
 115

<210> 141  
 <211> 112  
 <212> PRT  
 <213> Mus musculus

<400> 141

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Met Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Val Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 142  
 <211> 118  
 <212> PRT  
 <213> Mus musculus

<400> 142

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Ser Ser

20

25

30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Pro Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Asn Tyr Asn Gly Lys Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Val Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Gly Tyr Gly Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
 115

<210> 143

<211> 112

<212> PRT

<213> Mus musculus

<400> 143

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 144  
 <211> 118  
 <212> PRT  
 <213> Mus musculus

<400> 144

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Leu Asn Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Arg Ser  
 20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Asn Tyr Asn Gly Lys Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Thr Thr Ala Tyr  
 65 70 75 80

Met Gln Phe Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Gly Asp Gly Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
 115

<210> 145  
 <211> 112  
 <212> PRT  
 <213> Mus musculus

<400> 145

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser





Val Ser Ala  
115

<210> 147  
<211> 112  
<212> PRT  
<213> Mus musculus  
<400> 147

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Tyr Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Thr Ile  
65 70 75 80

Ser Ser Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
100 105 110

<210> 148  
<211> 115  
<212> PRT  
<213> Mus musculus

<400> 148

Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Leu Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asp Tyr  
20 25 30

Trp Met Asn Trp Val Lys Gln Arg Pro Gly Arg Gly Leu Glu Trp Ile  
35 40 45

Gly Arg Ile His Pro Phe Asp Ser Glu Thr His Cys Ser Gln Lys Phe  
 50 55 60

Lys Asn Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Asn Thr Ala Tyr  
 65 70 75 80

Ile Gln Phe Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Tyr Cys  
 85 90 95

Ser Ser Gly Gly Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr  
 100 105 110

Val Ser Ala  
 115

<210> 149  
 <211> 112  
 <212> PRT  
 <213> Mus musculus

<400> 149

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Ser Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu Tyr Ser  
 20 25 30

Asn Gly Asn Ile Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Lys Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 150  
 <211> 118  
 <212> PRT  
 <213> Mus musculus

<400> 150

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Ser  
 20 25 30

Trp Met Asn Trp Val Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe  
 50 55 60

Arg Val Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr  
 65 70 75 80

Met Glu Ile Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
 115

<210> 151  
 <211> 112  
 <212> PRT  
 <213> Mus musculus

<400> 151

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Val Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Asn  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Ile Glu Tyr Pro Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 152

<211> 118

<212> PRT

<213> Mus musculus

<400> 152

Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe Ser Asn Ser  
 20 25 30

Trp Met Asn Trp Val Asn Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Ile Tyr Asn Gly Asn Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser Ile Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Thr Ser Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ala  
 115

<210> 153

<211> 112  
 <212> PRT  
 <213> Mus musculus

<400> 153

Asp Ile Val Met Thr Gln Ala Ala Pro Ser Leu Pro Val Thr Pro Gly  
 1 5 10 15

Glu Ser Val Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Leu Glu Tyr Pro Tyr Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 154

<211> 423

<212> DNA

<213> Mus musculus

<220>

<221> CDS

<222> (1)..(423)

<400> 154

atg gtt ctt gcc agc tct acc acc agc atc cac acc atg ctg ctc ctg 48  
 Met Val Leu Ala Ser Ser Thr Thr Ser Ile His Thr Met Leu Leu Leu  
 1 5 10 15

ctc ctg atg ctg gcc cag ccg gcc atg gcg gaa gtg aag ctg gtg gag 96  
 Leu Leu Met Leu Ala Gln Pro Ala Met Ala Glu Val Lys Leu Val Glu  
 20 25 30

tct ggg gga ggc tta gtg aag cct gga ggg tcc cgg aaa ctc tcc tgt 144  
 Ser Gly Gly Gly Leu Val Lys Pro Gly Gly Ser Arg Lys Leu Ser Cys  
 35 40 45

gca gcc tct gga ttc act ttc agt agc tat acc atg tct tgg gtt cgc 192  
 Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Thr Met Ser Trp Val Arg  
 50 55 60

cag act ccg gcg aag agg ctg gag tgg gtc gca acc att agt agt ggc 240  
 Gln Thr Pro Ala Lys Arg Leu Glu Trp Val Ala Thr Ile Ser Ser Gly  
 65 70 75 80

agt agt acc atc tac tat gca gac aca gtg aag ggc cga ttc acc atc 288  
 Ser Ser Thr Ile Tyr Tyr Ala Asp Thr Val Lys Gly Arg Phe Thr Ile  
 85 90 95

tcc aga gac aat gcc aag aac acc ctg ttc ctg caa atg acc agt cta 336  
 Ser Arg Asp Asn Ala Lys Asn Thr Leu Phe Leu Gln Met Thr Ser Leu  
 100 105 110

agg tct gag gac aca gcc atg tat tac tgt gca agg aga tgg ttt ctt 384  
 Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys Ala Arg Arg Trp Phe Leu  
 115 120 125

gac tgc tgg ggc caa ggc acc act ctc aca gtc tcc tcg 423  
 Asp Cys Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser  
 130 135 140

<210> 155

<211> 141

<212> PRT

<213> Mus musculus

<400> 155

Met Val Leu Ala Ser Ser Thr Thr Ser Ile His Thr Met Leu Leu Leu  
 1 5 10 15

Leu Leu Met Leu Ala Gln Pro Ala Met Ala Glu Val Lys Leu Val Glu  
 20 25 30

Ser Gly Gly Gly Leu Val Lys Pro Gly Gly Ser Arg Lys Leu Ser Cys  
 35 40 45

Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr Thr Met Ser Trp Val Arg  
 50 55 60

Gln Thr Pro Ala Lys Arg Leu Glu Trp Val Ala Thr Ile Ser Ser Gly  
 65 70 75 80

Ser Ser Thr Ile Tyr Tyr Ala Asp Thr Val Lys Gly Arg Phe Thr Ile  
 85 90 95

Ser Arg Asp Asn Ala Lys Asn Thr Leu Phe Leu Gln Met Thr Ser Leu  
 100 105 110

Arg Ser Glu Asp Thr Ala Met Tyr Tyr Cys Ala Arg Arg Trp Phe Leu  
 115 120 125

Asp Cys Trp Gly Gln Gly Thr Thr Leu Thr Val Ser Ser  
 130 135 140

<210> 156  
 <211> 357  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (1)..(357)

<400> 156  
 gat att gtg ctc acc caa tct cca gct tct ttg gct gtg tct cta ggg 48  
 Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly  
 1 5 10 15  
 cag agt gtc acc atc tcc tgc aga gcc agt gaa agt gtt gaa tat tat 96  
 Gln Ser Val Thr Ile Ser Cys Arg Ala Ser Glu Ser Val Glu Tyr Tyr  
 20 25 30  
 ggc act agt tta atg cag tgg tac caa cag aaa cca gga cag cca ccc 144  
 Gly Thr Ser Leu Met Gln Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
 35 40 45  
 aaa ctc ctc atc tat ggt gca tcc aac gta gaa tct ggg gtc cct gcc 192  
 Lys Leu Leu Ile Tyr Gly Ala Ser Asn Val Glu Ser Gly Val Pro Ala  
 50 55 60  
 agg ttt agt ggc agt ggg tct ggg aca gac ttc agc ctc aac atc cat 240  
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Ser Leu Asn Ile His  
 65 70 75 80  
 cct gtg gag gag gat gat att gca atg tat ttc tgt cag caa agt agg 288  
 Pro Val Glu Glu Asp Asp Ile Ala Met Tyr Phe Cys Gln Gln Ser Arg  
 85 90 95  
 aag gtt ccg tgg acg ttc ggt gga ggc acc aag ctg gaa ata aag gac 336  
 Lys Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Asp  
 100 105 110  
 tac aag gat gac gac gat aag 357  
 Tyr Lys Asp Asp Asp Asp Lys  
 115

<210> 157



<211> 119  
 <212> PRT  
 <213> Mus musculus

<400> 157

Asp Ile Val Leu Thr Gln Ser Pro Ala Ser Leu Ala Val Ser Leu Gly  
 1                   5                   10                   15

Gln Ser Val Thr Ile Ser Cys Arg Ala Ser Glu Ser Val Glu Tyr Tyr  
           20                   25                   30

Gly Thr Ser Leu Met Gln Trp Tyr Gln Gln Lys Pro Gly Gln Pro Pro  
           35                   40                   45

Lys Leu Leu Ile Tyr Gly Ala Ser Asn Val Glu Ser Gly Val Pro Ala  
           50                   55                   60

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Ser Leu Asn Ile His  
 65                   70                   75                   80

Pro Val Glu Glu Asp Asp Ile Ala Met Tyr Phe Cys Gln Gln Ser Arg  
           85                   90                   95

Lys Val Pro Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Asp  
           100                   105                   110

Tyr Lys Asp Asp Asp Asp Lys  
           115

<210> 158  
 <211> 432  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (1)..(432)

<400> 158

atg gtt ctt gcc agc tct acc acc agc atc cac acc atg ctg ctc ctg           48  
 Met Val Leu Ala Ser Ser Thr Thr Ser Ile His Thr Met Leu Leu Leu  
 1                   5                   10                   15

ctc ctg atg ctg gcc cag ccg gcc atg gcg cag gtt cag ctc cag caa           96  
 Leu Leu Met Leu Ala Gln Pro Ala Met Ala Gln Val Gln Leu Gln Gln  
           20                   25                   30

tct gga cct gag ctg gtg aag cct ggg gcc tca gtg aag att tcc tgc           144

Ser Gly Pro Glu Leu Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys  
 35 40 45

aag gct tct ggc tat gca ttc agt agc tcc tgg atg aac tgg atg aag 192  
 Lys Ala Ser Gly Tyr Ala Phe Ser Ser Ser Trp Met Asn Trp Met Lys  
 50 55 60

cag agg cct gga aag ggt ctt gag tgg att ggg cgg att tat cct gga 240  
 Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly  
 65 70 75 80

gat gga gat act aac tac aat ggg aag ttc aag ggc aag gcc aca ctg 288  
 Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe Lys Gly Lys Ala Thr Leu  
 85 90 95

act gca gac aaa tcc tcc agc aca gcc tac atg caa ctc agc agc ctg 336  
 Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu  
 100 105 110

aca tct gag gac tct gcg gtc tac ttc tgt gca aga gcg agg aaa act 384  
 Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys Ala Arg Ala Arg Lys Thr  
 115 120 125

tcc tgg ttt gct tac tgg ggc caa ggg act ctg gtc act gtc tct gcg 432  
 Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala  
 130 135 140

<210> 159  
 <211> 144  
 <212> PRT  
 <213> Mus musculus

<400> 159

Met Val Leu Ala Ser Ser Thr Thr Ser Ile His Thr Met Leu Leu Leu  
 1 5 10 15

Leu Leu Met Leu Ala Gln Pro Ala Met Ala Gln Val Gln Leu Gln Gln  
 20 25 30

Ser Gly Pro Glu Leu Val Lys Pro Gly Ala Ser Val Lys Ile Ser Cys  
 35 40 45

Lys Ala Ser Gly Tyr Ala Phe Ser Ser Ser Trp Met Asn Trp Met Lys  
 50 55 60

Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly  
 65 70 75 80

Asp Gly Asp Thr Asn Tyr Asn Gly Lys Phe Lys Gly Lys Ala Thr Leu  
 85 90 95

Thr Ala Asp Lys Ser Ser Ser Thr Ala Tyr Met Gln Leu Ser Ser Leu  
 100 105 110

Thr Ser Glu Asp Ser Ala Val Tyr Phe Cys Ala Arg Ala Arg Lys Thr  
 115 120 125

Ser Trp Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala  
 130 135 140

<210> 160  
 <211> 345  
 <212> DNA  
 <213> Mus musculus

<220>  
 <221> CDS  
 <222> (1)..(345)

<400> 160  
 gac att gtg ttg aca cag tct caa aaa ttc atg tcc aca tca gta gga 48  
 Asp Ile Val Leu Thr Gln Ser Gln Lys Phe Met Ser Thr Ser Val Gly  
 1 5 10 15  
 gac agg gtc agc atc agc tgc aag gcc agt cag aat gtg ggt aat att 96  
 Asp Arg Val Ser Ile Ser Cys Lys Ala Ser Gln Asn Val Gly Asn Ile  
 20 25 30  
 ata gcc tgg tat caa cag aaa cca ggg caa tct cct aaa gca ctg att 144  
 Ile Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala Leu Ile  
 35 40 45  
 tac ttg gca tcc tac cgg tac agt gga gtc cct gat cgc ttc aca ggc 192  
 Tyr Leu Ala Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg Phe Thr Gly  
 50 55 60  
 agt gga tct ggg aca gat ttc act ctc acc att agt aat gtg cag tct 240  
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser  
 65 70 75 80  
 gaa gac ttg gca gag tat ttc tgt cag caa tat agc agc tct ccg ctc 288  
 Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Ser Ser Ser Pro Leu  
 85 90 95  
 acg ttc ggt gct ggg acc aag ctg gaa ata aag gac tac aag gat gac 336  
 Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Asp Tyr Lys Asp Asp  
 100 105 110  
 gac gat aag 345  
 Asp Asp Lys  
 115

<210> 161  
 <211> 115  
 <212> PRT  
 <213> Mus musculus

<400> 161

Asp Ile Val Leu Thr Gln Ser Gln Lys Phe Met Ser Thr Ser Val Gly  
 1                   5                   10                   15

Asp Arg Val Ser Ile Ser Cys Lys Ala Ser Gln Asn Val Gly Asn Ile  
           20                   25                   30

Ile Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Ala Leu Ile  
           35                   40                   45

Tyr Leu Ala Ser Tyr Arg Tyr Ser Gly Val Pro Asp Arg Phe Thr Gly  
           50                   55                   60

Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Asn Val Gln Ser  
 65                   70                   75                   80

Glu Asp Leu Ala Glu Tyr Phe Cys Gln Gln Tyr Ser Ser Ser Pro Leu  
           85                   90                   95

Thr Phe Gly Ala Gly Thr Lys Leu Glu Ile Lys Asp Tyr Lys Asp Asp  
           100                   105                   110

Asp Asp Lys  
 115

<210> 162  
 <211> 116  
 <212> PRT  
 <213> Mus musculus

<400> 162

Asp Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln  
 1                   5                   10                   15

Ser Leu Ser Leu Thr Cys Thr Val Thr Gly Tyr Ser Ile Thr Ser Asp  
           20                   25                   30

Tyr Ala Trp Ser Trp Ile Arg Gln Leu Pro Gly Asn Lys Leu Glu Trp  
           35                   40                   45

Met Gly Tyr Ile Thr Tyr Ser Gly Tyr Ser Ile Tyr Asn Pro Ser Leu  
 50 55 60

Lys Ser Arg Ile Ser Ile Ser Arg Asp Thr Ser Lys Asn Gln Leu Phe  
 65 70 75 80

Leu Gln Leu Asn Ser Val Thr Thr Glu Asp Thr Ala Thr Tyr Tyr Cys  
 85 90 95

Val Gly Gly Tyr Asp Asn Met Asp Tyr Trp Gly Gln Gly Thr Ser Val  
 100 105 110

Thr Val Ser Ser  
 115

<210> 163  
 <211> 108  
 <212> PRT  
 <213> Mus musculus

<400> 163

Gln Ile Val Leu Thr Gln Ser Pro Ala Ile Met Ser Ala Ser Pro Gly  
 1 5 10 15

Glu Lys Val Thr Leu Thr Cys Ser Ala Ser Ser Ser Val Ser Ser Ser  
 20 25 30

His Leu Tyr Trp Tyr Gln Gln Lys Pro Gly Ser Ser Pro Lys Leu Trp  
 35 40 45

Ile Tyr Ser Thr Ser Asn Leu Ala Ser Gly Val Pro Ala Arg Phe Ser  
 50 55 60

Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile Ser Asn Met Glu  
 65 70 75 80

Thr Glu Asp Ala Ala Ser Tyr Phe Cys His Gln Trp Ser Ser Tyr Pro  
 85 90 95

Trp Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105

<210> 164

&lt;211&gt; 1924

&lt;212&gt; DNA

<213> *Macaca fascicularis*

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (11)..(1918)

&lt;400&gt; 164

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gaattccacc atg ccc tcc tgg gcc ctc ttc atg gtc acc tcc tgc ctc      49
      Met Pro Ser Trp Ala Leu Phe Met Val Thr Ser Cys Leu
          1             5             10

ctc ctg gcc cct caa aac ctg gcc caa gtc agc agc caa gat gtc tcc      97
Leu Leu Ala Pro Gln Asn Leu Ala Gln Val Ser Ser Gln Asp Val Ser
      15             20             25

ttg ctg gcc tcg gac tca gag ccc ctg aag tgt ttc tcc cga aca ttt     145
Leu Leu Ala Ser Asp Ser Glu Pro Leu Lys Cys Phe Ser Arg Thr Phe
      30             35             40             45

gag gac ctc act tgc ttc tgg gat gag gaa gag gca gca ccc agt ggg     193
Glu Asp Leu Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly
          50             55             60

aca tac cag ctg ctg tat gcc tac ccg ggg gag aag ccc cgt gcc tgc     241
Thr Tyr Gln Leu Leu Tyr Ala Tyr Pro Gly Glu Lys Pro Arg Ala Cys
          65             70             75

ccc ctg agt tct cag agc gtg ccc cgc ttt gga acc cga tac gtg tgc     289
Pro Leu Ser Ser Gln Ser Val Pro Arg Phe Gly Thr Arg Tyr Val Cys
          80             85             90

cag ttt cca gcc cag gaa gaa gtg cgt ctc ttc tct ccg ctg cac ctc     337
Gln Phe Pro Ala Gln Glu Glu Val Arg Leu Phe Ser Pro Leu His Leu
          95             100            105

tgg gtg aag aat gtg ttc cta aac cag act cag att cag cga gtc ctc     385
Trp Val Lys Asn Val Phe Leu Asn Gln Thr Gln Ile Gln Arg Val Leu
      110             115            120            125

ttt gtg gac agt gta ggc ctg ccg gct ccc ccc agt atc atc aag gcc     433
Phe Val Asp Ser Val Gly Leu Pro Ala Pro Pro Ser Ile Ile Lys Ala
          130            135            140

atg ggt ggg agc cag cca ggg gaa ctt cag atc agc tgg gag gcc cca     481
Met Gly Gly Ser Gln Pro Gly Glu Leu Gln Ile Ser Trp Glu Ala Pro
          145            150            155

gct cca gaa atc agt gat ttc ctg agg tac gaa ctc cgc tat ggc ccc     529
Ala Pro Glu Ile Ser Asp Phe Leu Arg Tyr Glu Leu Arg Tyr Gly Pro
          160            165            170

aaa gat ctc aag aac tcc act ggt ccc acg gtc ata cag ttg atc gcc     577
Lys Asp Leu Lys Asn Ser Thr Gly Pro Thr Val Ile Gln Leu Ile Ala
          175            180            185

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aca gaa acc tgc tgc cct gct ctg cag agg cca cac tca gcc tct gct Thr Glu Thr Cys Cys Pro Ala Leu Gln Arg Pro His Ser Ala Ser Ala 190 195 200 205	625
ctg gac cag tct cca tgt gct cag ccc aca atg ccc tgg caa gat gga Leu Asp Gln Ser Pro Cys Ala Gln Pro Thr Met Pro Trp Gln Asp Gly 210 215 220	673
cca aag cag acc tcc cca act aga gaa gct tca gct ctg aca gca gtg Pro Lys Gln Thr Ser Pro Thr Arg Glu Ala Ser Ala Leu Thr Ala Val 225 230 235	721
ggg gga agc tgc ctc atc tca gga ctc cag cct ggc aac tcc tac tgg Gly Gly Ser Cys Leu Ile Ser Gly Leu Gln Pro Gly Asn Ser Tyr Trp 240 245 250	769
ctg cag ctg cgc agc gaa cct gat ggg atc tcc ctc ggt ggc tcc tgg Leu Gln Leu Arg Ser Glu Pro Asp Gly Ile Ser Leu Gly Gly Ser Trp 255 260 265	817
gga tcc tgg tcc ctc cct gtg act gtg gac ctg cct gga gat gca gtg Gly Ser Trp Ser Leu Pro Val Thr Val Asp Leu Pro Gly Asp Ala Val 270 275 280 285	865
gca att gga ctg caa tgc ttt acc ttg gac ctg aag aat gtt acc tgt Ala Ile Gly Leu Gln Cys Phe Thr Leu Asp Leu Lys Asn Val Thr Cys 290 295 300	913
caa tgg cag caa gag gac cat gct agt tcc caa ggt ttc ttc tac cac Gln Trp Gln Gln Glu Asp His Ala Ser Ser Gln Gly Phe Phe Tyr His 305 310 315	961
agc agg gca cgg tgc tgc ccc aga gac agg tac ccc atc tgg gag gac Ser Arg Ala Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asp 320 325 330	1009
tgt gaa gag gaa gag aaa aca aat cca gga tta cag acc cca cag ttc Cys Glu Glu Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe 335 340 345	1057
tct cgc tgc cac ttc aag tca cga aat gac agc gtt att cac atc ctt Ser Arg Cys His Phe Lys Ser Arg Asn Asp Ser Val Ile His Ile Leu 350 355 360 365	1105
gtg gag gtg acc aca gcc ctg ggt gct gtt cac agt tac ctg ggc tcc Val Glu Val Thr Thr Ala Leu Gly Ala Val His Ser Tyr Leu Gly Ser 370 375 380	1153
cct ttc tgg atc cac cag gct gtg cgc ctc ccc acc cca aac ttg cac Pro Phe Trp Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His 385 390 395	1201
tgg agg gag atc tcc agc ggg cat ctg gaa ttg gag tgg cag cac cca Trp Arg Glu Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro 400 405 410	1249
tca tcc tgg gca gcc caa gag acc tgc tat caa ctc cga tac aca gga	1297





&lt;210&gt; 165

&lt;211&gt; 635

&lt;212&gt; PRT

<213> *Macaca fascicularis*

&lt;400&gt; 165

Met Pro Ser Trp Ala Leu Phe Met Val Thr Ser Cys Leu Leu Leu Ala  
 1 5 10 15

Pro Gln Asn Leu Ala Gln Val Ser Ser Gln Asp Val Ser Leu Leu Ala  
 20 25 30

Ser Asp Ser Glu Pro Leu Lys Cys Phe Ser Arg Thr Phe Glu Asp Leu  
 35 40 45

Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly Thr Tyr Gln  
 50 55 60

Leu Leu Tyr Ala Tyr Pro Gly Glu Lys Pro Arg Ala Cys Pro Leu Ser  
 65 70 75 80

Ser Gln Ser Val Pro Arg Phe Gly Thr Arg Tyr Val Cys Gln Phe Pro  
 85 90 95

Ala Gln Glu Glu Val Arg Leu Phe Ser Pro Leu His Leu Trp Val Lys  
 100 105 110

Asn Val Phe Leu Asn Gln Thr Gln Ile Gln Arg Val Leu Phe Val Asp  
 115 120 125

Ser Val Gly Leu Pro Ala Pro Pro Ser Ile Ile Lys Ala Met Gly Gly  
 130 135 140

Ser Gln Pro Gly Glu Leu Gln Ile Ser Trp Glu Ala Pro Ala Pro Glu  
 145 150 155 160

Ile Ser Asp Phe Leu Arg Tyr Glu Leu Arg Tyr Gly Pro Lys Asp Leu  
 165 170 175

Lys Asn Ser Thr Gly Pro Thr Val Ile Gln Leu Ile Ala Thr Glu Thr  
 180 185 190

Cys Cys Pro Ala Leu Gln Arg Pro His Ser Ala Ser Ala Leu Asp Gln  
 195 200 205

Ser Pro Cys Ala Gln Pro Thr Met Pro Trp Gln Asp Gly Pro Lys Gln  
 210 215 220

Thr Ser Pro Thr Arg Glu Ala Ser Ala Leu Thr Ala Val Gly Gly Ser  
 225 230 235 240

Cys Leu Ile Ser Gly Leu Gln Pro Gly Asn Ser Tyr Trp Leu Gln Leu  
 245 250 255

Arg Ser Glu Pro Asp Gly Ile Ser Leu Gly Gly Ser Trp Gly Ser Trp  
 260 265 270

Ser Leu Pro Val Thr Val Asp Leu Pro Gly Asp Ala Val Ala Ile Gly  
 275 280 285

Leu Gln Cys Phe Thr Leu Asp Leu Lys Asn Val Thr Cys Gln Trp Gln  
 290 295 300

Gln Glu Asp His Ala Ser Ser Gln Gly Phe Phe Tyr His Ser Arg Ala  
 305 310 315 320

Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asp Cys Glu Glu  
 325 330 335

Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe Ser Arg Cys  
 340 345 350

His Phe Lys Ser Arg Asn Asp Ser Val Ile His Ile Leu Val Glu Val  
 355 360 365

Thr Thr Ala Leu Gly Ala Val His Ser Tyr Leu Gly Ser Pro Phe Trp  
 370 375 380

Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His Trp Arg Glu  
 385 390 395 400

Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro Ser Ser Trp  
 405 410 415

Ala Ala Gln Glu Thr Cys Tyr Gln Leu Arg Tyr Thr Gly Glu Gly His

	420		425		430														
Gln	Asp	Trp	Lys	Val	Leu	Glu	Pro	Pro	Leu	Gly	Ala	Arg	Gly	Gly	Thr				
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Leu	Glu	Leu	Arg	Pro	Arg	Ser	Arg	Tyr	Arg	Leu	Gln	Leu	Arg	Ala	Arg				
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Leu	Asn	Gly	Pro	Thr	Tyr	Gln	Gly	Pro	Trp	Ser	Ser	Trp	Ser	Asp	Pro				
465					470					475					480				
Ala	Arg	Val	Glu	Thr	Ala	Thr	Glu	Thr	Ala	Trp	Ile	Ser	Leu	Val	Thr				
				485					490						495				
Ala	Leu	Leu	Leu	Val	Leu	Gly	Leu	Ser	Ala	Val	Leu	Gly	Leu	Leu	Leu				
			500					505					510						
Leu	Arg	Trp	Gln	Phe	Pro	Ala	His	Tyr	Arg	Arg	Leu	Arg	His	Ala	Leu				
		515					520						525						
Trp	Pro	Ser	Leu	Pro	Asp	Leu	His	Arg	Val	Leu	Gly	Gln	Tyr	Leu	Arg				
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Asp	Thr	Ala	Ala	Leu	Ser	Pro	Pro	Lys	Ala	Thr	Val	Ser	Asp	Thr	Cys				
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Glu	Glu	Val	Glu	Pro	Ser	Leu	Leu	Glu	Ile	Leu	Pro	Lys	Ser	Ser	Glu				
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Arg	Leu	Gln	Pro	Ser	Cys	Leu	Gly	Thr	Met	Pro	Leu	Ser	Val	Cys	Pro				
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Pro	Met	Ala	Glu	Ser	Gly	Ser	Cys	Cys	Thr	Thr	His	Ile	Ala	Asn	His				
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<400> 167  
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<210> 168  
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<400> 172

Asp Tyr Lys Asp Asp Asp Asp Lys  
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 cggatattgt gatgactcag gc 82

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cctgcagaga cagtgaccag ag 82

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<211> 25

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caggttcagc tgcagcagtc tggac 25

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<211> 81

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cttttatttc cagcttggtc c 81

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38

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38

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38

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38

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38

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gccagccgg ccatggcgca ggtccacgtg aagcagtc

38

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gccagccgg ccatggcgga ggtgaastg gtggaatc

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gccagccgg ccatggcgga vgtgawgytg gtggagtc

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<210> 187

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35

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ggcggcgggcg gctccgayrt tktgatgacc carac 35

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ggaattcggc ccccgaggcc ttgattcca gcttgg 36

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36

<210> 223

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<212> DNA

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39

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ttactcgcgg cccagccggc catggcg

27

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ggaattcggc ccccgag

17

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<400> 226

tcacttacag gctctctact

20



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 cctggaaagg gtcttgagtg gatgggacgg atttatcctg gagatggaga aactatctac 180  
 aatgggaaat tcagggtcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagaggctat 300  
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<210> 229  
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 <212> PRT  
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<400> 229

Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Ala  
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Ser  
 20 25 30

Trp Met Asn Trp Val Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp Met  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe  
 50 55 60

Arg Val Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr  
 65 70 75 80



Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe Arg  
 1 5 10 15

Val

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 <212> PRT  
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<400> 234

Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr Met Glu  
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Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg  
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Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr  
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Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
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 ttccagcaga agccagggca gtctccacag ctctgatct atcggatgtc caaccttgcc 180

tcaggggtcc ctgacaggtt cagtggcagt ggatcaggca cagcttttac actgaaaatc 240  
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Asp Ile Val Met Thr Gln Ser Ala Leu Ser Leu Pro Val Thr Pro Gly  
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Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
 20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Gln Gln Lys Pro Gly Gln Ser  
 35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
 50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Lys Ile  
 65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
 85 90 95

Ile Glu Tyr Pro Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 239  
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 <212> PRT  
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<400> 239

Asp Ile Val Met Thr Gln Ser Ala Leu Ser Leu Pro Val Thr Pro Gly  
 1 5 10 15

Glu Pro Ala Ser Ile Ser Cys  
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<210> 240  
 <211> 16  
 <212> PRT  
 <213> Homo sapiens

<400> 240

Arg Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr  
 1 5 10 15

<210> 241  
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 <212> PRT  
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<400> 241

Trp Phe Gln Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr  
 1 5 10 15

<210> 242  
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 <213> Homo sapiens

<400> 242

Arg Met Ser Asn Leu Ala Ser  
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<210> 243  
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 <212> PRT  
 <213> Homo sapiens

<400> 243

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr  
 1 5 10 15

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys  
 20 25 30

<210> 244  
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 <212> PRT  
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<400> 244

Met Gln His Ile Glu Tyr Pro Phe Thr  
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ttgcctgggg accatgcccc tgtctgtgtg cccacccatg gctgagtcag ggtcctgctg 1860  
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cgac 1924

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<400> 247  
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1 5 10  
ctc ctg gcc cct caa aac ctg gcc caa gtc agc agc caa gat gtc tcc 97  
Leu Leu Ala Pro Gln Asn Leu Ala Gln Val Ser Ser Gln Asp Val Ser  
15 20 25  
ttg ctg gca tca gac tca gag ccc ctg aag tgt ttc tcc cga aca ttt 145  
Leu Leu Ala Ser Asp Ser Glu Pro Leu Lys Cys Phe Ser Arg Thr Phe  
30 35 40 45  
gag gac ctc act tgc ttc tgg gat gag gaa gag gca gcg ccc agt ggg 193  
Glu Asp Leu Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly  
50 55 60  
aca tac cag ctg ctg tat gcc tac ccg cgg gag aag ccc cgt gct tgc 241  
Thr Tyr Gln Leu Leu Tyr Ala Tyr Pro Arg Glu Lys Pro Arg Ala Cys

65					70					75						
ccc	ctg	agt	tcc	cag	agc	atg	ccc	cac	ttt	gga	acc	cga	tac	gtg	tgc	289
Pro	Leu	Ser	Ser	Gln	Ser	Met	Pro	His	Phe	Gly	Thr	Arg	Tyr	Val	Cys	
		80					85					90				
cag	ttt	cca	gac	cag	gag	gaa	gtg	cct	ctc	ttc	ttt	ccg	ctg	cac	ctc	337
Gln	Phe	Pro	Asp	Gln	Glu	Glu	Val	Pro	Leu	Phe	Phe	Pro	Leu	His	Leu	
	95					100					105					
tgg	gtg	aag	aat	gtg	ttc	cta	aac	cag	act	cgg	act	cag	cga	gtc	ctc	385
Trp	Val	Lys	Asn	Val	Phe	Leu	Asn	Gln	Thr	Arg	Thr	Gln	Arg	Val	Leu	
110					115					120					125	
ttt	gtg	gac	agt	gta	ggc	ctg	ccg	gct	ccc	ccc	agt	atc	atc	aag	gcc	433
Phe	Val	Asp	Ser	Val	Gly	Leu	Pro	Ala	Pro	Pro	Ser	Ile	Ile	Lys	Ala	
				130					135					140		
atg	ggt	ggg	agc	cag	cca	ggg	gaa	ctt	cag	atc	agc	tgg	gag	gag	cca	481
Met	Gly	Gly	Ser	Gln	Pro	Gly	Glu	Leu	Gln	Ile	Ser	Trp	Glu	Glu	Pro	
			145					150					155			
gct	cca	gaa	atc	agt	gat	ttc	ctg	agg	tac	gaa	ctc	cgc	tat	ggc	ccc	529
Ala	Pro	Glu	Ile	Ser	Asp	Phe	Leu	Arg	Tyr	Glu	Leu	Arg	Tyr	Gly	Pro	
		160					165					170				
aga	gat	ccc	aag	aac	tcc	act	ggt	ccc	acg	gtc	ata	cag	ctg	att	gcc	577
Arg	Asp	Pro	Lys	Asn	Ser	Thr	Gly	Pro	Thr	Val	Ile	Gln	Leu	Ile	Ala	
	175					180					185					
aca	gaa	acc	tgc	tgc	cct	gct	ctg	cag	aga	cct	cac	tca	gcc	tct	gct	625
Thr	Glu	Thr	Cys	Cys	Pro	Ala	Leu	Gln	Arg	Pro	His	Ser	Ala	Ser	Ala	
190					195					200					205	
ctg	gac	cag	tct	cca	tgt	gct	cag	ccc	aca	atg	ccc	tgg	caa	gat	gga	673
Leu	Asp	Gln	Ser	Pro	Cys	Ala	Gln	Pro	Thr	Met	Pro	Trp	Gln	Asp	Gly	
				210					215					220		
cca	aag	cag	acc	tcc	cca	agt	aga	gaa	gct	tca	gct	ctg	aca	gca	gag	721
Pro	Lys	Gln	Thr	Ser	Pro	Ser	Arg	Glu	Ala	Ser	Ala	Leu	Thr	Ala	Glu	
			225					230					235			
ggt	gga	agc	tgc	ctc	atc	tca	gga	ctc	cag	cct	ggc	aac	tcc	tac	tgg	769
Gly	Gly	Ser	Cys	Leu	Ile	Ser	Gly	Leu	Gln	Pro	Gly	Asn	Ser	Tyr	Trp	
		240					245					250				
ctg	cag	ctg	cgc	agc	gaa	cct	gat	ggg	atc	tcc	ctc	ggt	ggc	tcc	tgg	817
Leu	Gln	Leu	Arg	Ser	Glu	Pro	Asp	Gly	Ile	Ser	Leu	Gly	Gly	Ser	Trp	
	255					260					265					
gga	tcc	tgg	tcc	ctc	cct	gtg	act	gtg	gac	ctg	cct	gga	gat	gca	gtg	865
Gly	Ser	Trp	Ser	Leu	Pro	Val	Thr	Val	Asp	Leu	Pro	Gly	Asp	Ala	Val	
270					275					280					285	
gca	ctt	gga	ctg	caa	tgc	ttt	acc	ttg	gac	ctg	aag	aat	ggt	acc	tgt	913
Ala	Leu	Gly	Leu	Gln	Cys	Phe	Thr	Leu	Asp	Leu	Lys	Asn	Val	Thr	Cys	
				290					295					300		



caa tgg cag caa cag gac cat gct agc tcc caa ggc ttc ttc tac cac Gln Trp Gln Gln Gln Asp His Ala Ser Ser Gln Gly Phe Phe Tyr His 305 310 315	961
agc agg gca cgg tgc tgc ccc aga gac agg tac ccc atc tgg gag aac Ser Arg Ala Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asn 320 325 330	1009
tgc gaa gag gaa gag aaa aca aat cca gga cta cag acc cca cag ttc Cys Glu Glu Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe 335 340 345	1057
tct cgc tgc cac ttc aag tca cga aat gac agc att att cac atc ctt Ser Arg Cys His Phe Lys Ser Arg Asn Asp Ser Ile Ile His Ile Leu 350 355 360 365	1105
gtg gag gtg acc aca gcc ccg ggt act gtt cac agc tac ctg ggc tcc Val Glu Val Thr Thr Ala Pro Gly Thr Val His Ser Tyr Leu Gly Ser 370 375 380	1153
cct ttc tgg atc cac cag gct gtg cgc ctc ccc acc cca aac ttg cac Pro Phe Trp Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His 385 390 395	1201
tgg agg gag atc tcc agt ggg cat ctg gaa ttg gag tgg cag cac cca Trp Arg Glu Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro 400 405 410	1249
tcg tcc tgg gca gcc caa gag acc tgt tat caa ctc cga tac aca gga Ser Ser Trp Ala Ala Gln Glu Thr Cys Tyr Gln Leu Arg Tyr Thr Gly 415 420 425	1297
gaa ggc cat cag gac tgg aag gtg ctg gag ccg cct ctc ggg gcc cga Glu Gly His Gln Asp Trp Lys Val Leu Glu Pro Pro Leu Gly Ala Arg 430 435 440 445	1345
gga ggg acc ctg gag ctg cgc ccg cga tct cgc tac cgt tta cag ctg Gly Gly Thr Leu Glu Leu Arg Pro Arg Ser Arg Tyr Arg Leu Gln Leu 450 455 460	1393
cgc gcc agg ctc aac ggc ccc acc tac caa ggt ccc tgg agc tcg tgg Arg Ala Arg Leu Asn Gly Pro Thr Tyr Gln Gly Pro Trp Ser Ser Trp 465 470 475	1441
tcg gac cca act agg gtg gag acc gcc acc gag acc gcc tgg atc tcc Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser 480 485 490	1489
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ctg ctg ctg ctg agg tgg cag ttt cct gca cac tac agg aga ctg agg Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg 510 515 520 525	1585



Ser Gln Ser Met Pro His Phe Gly Thr Arg Tyr Val Cys Gln Phe Pro  
 85 90 95

Asp Gln Glu Glu Val Pro Leu Phe Phe Pro Leu His Leu Trp Val Lys  
 100 105 110

Asn Val Phe Leu Asn Gln Thr Arg Thr Gln Arg Val Leu Phe Val Asp  
 115 120 125

Ser Val Gly Leu Pro Ala Pro Pro Ser Ile Ile Lys Ala Met Gly Gly  
 130 135 140

Ser Gln Pro Gly Glu Leu Gln Ile Ser Trp Glu Glu Pro Ala Pro Glu  
 145 150 155 160

Ile Ser Asp Phe Leu Arg Tyr Glu Leu Arg Tyr Gly Pro Arg Asp Pro  
 165 170 175

Lys Asn Ser Thr Gly Pro Thr Val Ile Gln Leu Ile Ala Thr Glu Thr  
 180 185 190

Cys Cys Pro Ala Leu Gln Arg Pro His Ser Ala Ser Ala Leu Asp Gln  
 195 200 205

Ser Pro Cys Ala Gln Pro Thr Met Pro Trp Gln Asp Gly Pro Lys Gln  
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Thr Ser Pro Ser Arg Glu Ala Ser Ala Leu Thr Ala Glu Gly Gly Ser  
 225 230 235 240

Cys Leu Ile Ser Gly Leu Gln Pro Gly Asn Ser Tyr Trp Leu Gln Leu  
 245 250 255

Arg Ser Glu Pro Asp Gly Ile Ser Leu Gly Gly Ser Trp Gly Ser Trp  
 260 265 270

Ser Leu Pro Val Thr Val Asp Leu Pro Gly Asp Ala Val Ala Leu Gly  
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Leu Gln Cys Phe Thr Leu Asp Leu Lys Asn Val Thr Cys Gln Trp Gln  
 290 295 300

Gln Gln Asp His Ala Ser Ser Gln Gly Phe Phe Tyr His Ser Arg Ala  
 305 310 315 320

Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asn Cys Glu Glu  
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Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe Ser Arg Cys  
 340 345 350

His Phe Lys Ser Arg Asn Asp Ser Ile Ile His Ile Leu Val Glu Val  
 355 360 365

Thr Thr Ala Pro Gly Thr Val His Ser Tyr Leu Gly Ser Pro Phe Trp  
 370 375 380

Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His Trp Arg Glu  
 385 390 395 400

Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro Ser Ser Trp  
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Ala Ala Gln Glu Thr Cys Tyr Gln Leu Arg Tyr Thr Gly Glu Gly His  
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Gln Asp Trp Lys Val Leu Glu Pro Pro Leu Gly Ala Arg Gly Gly Thr  
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Leu Glu Leu Arg Pro Arg Ser Arg Tyr Arg Leu Gln Leu Arg Ala Arg  
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Leu Asn Gly Pro Thr Tyr Gln Gly Pro Trp Ser Ser Trp Ser Asp Pro  
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Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr  
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Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu  
 500 505 510

Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu  
 515 520 525

Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg

530

535

540

Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys  
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Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu  
 565 570 575

Arg Thr Pro Leu Pro Leu Cys Ser Ser Gln Ala Gln Met Asp Tyr Arg  
 580 585 590

Arg Leu Gln Pro Ser Cys Leu Gly Thr Met Pro Leu Ser Val Cys Pro  
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 Leu Leu Ala Pro Gln Asn Leu Ala Gln Val Ser Ser Gln Asp Val Ser  
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 Leu Leu Ala Ser Asp Ser Glu Pro Leu Lys Cys Phe Ser Arg Thr Phe  
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gag gac ctc act tgc ttc tgg gat gag gaa gag gca gcg ccc agt ggg 193  
 Glu Asp Leu Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly  
 50 55 60

aca tac cag ctg ctg tat gcc tac ccg cgg gag aag ccc cgt gct tgc 241  
 Thr Tyr Gln Leu Leu Tyr Ala Tyr Pro Arg Glu Lys Pro Arg Ala Cys  
 65 70 75

ccc ctg agt tcc cag agc atg ccc cac ttt gga acc cga tac gtg tgc	289
Pro Leu Ser Ser Gln Ser Met Pro His Phe Gly Thr Arg Tyr Val Cys	
80 85 90	
cag ttt cca gac cag gag gaa gtg cgt ctc ttc ttt ccg ctg cac ctc	337
Gln Phe Pro Asp Gln Glu Glu Val Arg Leu Phe Phe Pro Leu His Leu	
95 100 105	
tgg gtg aag aat gtg ttc cta aac cag act cgg act cag cga gtc ctc	385
Trp Val Lys Asn Val Phe Leu Asn Gln Thr Arg Thr Gln Arg Val Leu	
110 115 120 125	
ttt gtg gac agt gta ggc ctg ccg gct ccc ccc agt atc atc aag gcc	433
Phe Val Asp Ser Val Gly Leu Pro Ala Pro Pro Ser Ile Ile Lys Ala	
130 135 140	
atg ggt ggg agc cag cca ggg gaa ctt cag atc agc tgg gag gag cca	481
Met Gly Gly Ser Gln Pro Gly Glu Leu Gln Ile Ser Trp Glu Glu Pro	
145 150 155	
gct cca gaa atc agt gat ttc ctg agg tac gaa ctc cgc tat ggc ccc	529
Ala Pro Glu Ile Ser Asp Phe Leu Arg Tyr Glu Leu Arg Tyr Gly Pro	
160 165 170	
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Arg Asp Pro Lys Asn Ser Thr Gly Pro Thr Val Ile Gln Leu Ile Ala	
175 180 185	
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Thr Glu Thr Cys Cys Pro Ala Leu Gln Arg Pro His Ser Ala Ser Ala	
190 195 200 205	
ctg gac cag tct cca tgt gct cag ccc aca atg ccc tgg caa gat gga	673
Leu Asp Gln Ser Pro Cys Ala Gln Pro Thr Met Pro Trp Gln Asp Gly	
210 215 220	
cca aag cag acc tcc cca agt aga gaa gct tca gct ctg aca gca gag	721
Pro Lys Gln Thr Ser Pro Ser Arg Glu Ala Ser Ala Leu Thr Ala Glu	
225 230 235	
ggt gga agc tgc ctc atc tca gga ctc cag cct ggc aac tcc tac tgg	769
Gly Gly Ser Cys Leu Ile Ser Gly Leu Gln Pro Gly Asn Ser Tyr Trp	
240 245 250	
ctg cag ctg tgc agc gaa cct gat ggg atc tcc ctc ggt ggc tcc tgg	817
Leu Gln Leu Cys Ser Glu Pro Asp Gly Ile Ser Leu Gly Gly Ser Trp	
255 260 265	
gga tcc tgg tcc ctc cct gtg act gtg gac ctg cct gga gat gca gtg	865
Gly Ser Trp Ser Leu Pro Val Thr Val Asp Leu Pro Gly Asp Ala Val	
270 275 280 285	
gca ctt gga ctg caa tgc ttt acc ttg gac ctg aag aat gtt acc tgt	913
Ala Leu Gly Leu Gln Cys Phe Thr Leu Asp Leu Lys Asn Val Thr Cys	
290 295 300	
caa tgg cag caa cag gac cat gct agc tcc caa ggc ttc ttc tac cac	961

Gln	Trp	Gln	Gln	Gln	Asp	His	Ala	Ser	Ser	Gln	Gly	Phe	Phe	Tyr	His		
		305						310					315				
agc	agg	gca	cgg	tgc	tgc	ccc	aga	gac	agg	tac	ccc	atc	tgg	gag	aac		1009
Ser	Arg	Ala	Arg	Cys	Cys	Pro	Arg	Asp	Arg	Tyr	Pro	Ile	Trp	Glu	Asn		
		320					325					330					
tgc	gaa	gag	gaa	gag	aaa	aca	aat	cca	gga	cta	cag	acc	cca	cag	ttc		1057
Cys	Glu	Glu	Glu	Glu	Lys	Thr	Asn	Pro	Gly	Leu	Gln	Thr	Pro	Gln	Phe		
	335					340					345						
tct	cgc	tgc	cac	ttc	aag	tca	cga	aat	gac	agc	att	att	cac	atc	ctt		1105
Ser	Arg	Cys	His	Phe	Lys	Ser	Arg	Asn	Asp	Ser	Ile	Ile	His	Ile	Leu		
350					355					360					365		
gtg	gag	gtg	acc	aca	gcc	ccg	ggt	act	gtt	cac	agc	tac	ctg	ggc	tcc		1153
Val	Glu	Val	Thr	Thr	Ala	Pro	Gly	Thr	Val	His	Ser	Tyr	Leu	Gly	Ser		
			370					375						380			
cct	ttc	tgg	atc	cac	cag	gct	gtg	cgc	ctc	ccc	acc	cca	aac	ttg	cac		1201
Pro	Phe	Trp	Ile	His	Gln	Ala	Val	Arg	Leu	Pro	Thr	Pro	Asn	Leu	His		
			385					390					395				
tgg	agg	gag	atc	tcc	agt	ggg	cat	ctg	gaa	ttg	gag	tgg	cag	cac	cca		1249
Trp	Arg	Glu	Ile	Ser	Ser	Gly	His	Leu	Glu	Leu	Glu	Trp	Gln	His	Pro		
		400					405					410					
tcg	tcc	tgg	gca	gcc	caa	gag	acc	tgt	tat	caa	ctc	cga	tac	aca	gga		1297
Ser	Ser	Trp	Ala	Ala	Gln	Glu	Thr	Cys	Tyr	Gln	Leu	Arg	Tyr	Thr	Gly		
	415					420					425						
gaa	ggc	cat	cag	gac	tgg	aag	gtg	ctg	gag	ccg	cct	ctc	ggg	gcc	cga		1345
Glu	Gly	His	Gln	Asp	Trp	Lys	Val	Leu	Glu	Pro	Pro	Leu	Gly	Ala	Arg		
430					435					440					445		
gga	ggg	acc	ctg	gag	ctg	cgc	ccg	cga	tct	cgc	tac	cgt	tta	cag	ctg		1393
Gly	Gly	Thr	Leu	Glu	Leu	Arg	Pro	Arg	Ser	Arg	Tyr	Arg	Leu	Gln	Leu		
			450					455						460			
cgc	gcc	agg	ctc	aac	ggc	ccc	acc	tac	caa	ggt	ccc	tgg	agc	tcg	tgg		1441
Arg	Ala	Arg	Leu	Asn	Gly	Pro	Thr	Tyr	Gln	Gly	Pro	Trp	Ser	Ser	Trp		
			465					470					475				
tcg	gac	cca	act	agg	gtg	gag	acc	gcc	acc	gag	acc	gcc	tgg	atc	tcc		1489
Ser	Asp	Pro	Thr	Arg	Val	Glu	Thr	Ala	Thr	Glu	Thr	Ala	Trp	Ile	Ser		
		480						485					490				
ttg	gtg	acc	gct	ctg	cat	cta	gtg	ctg	ggc	ctc	agc	gcc	gtc	ctg	ggc		1537
Leu	Val	Thr	Ala	Leu	His	Leu	Val	Leu	Gly	Leu	Ser	Ala	Val	Leu	Gly		
	495					500					505						
ctg	ctg	ctg	ctg	agg	tgg	cag	ttt	cct	gca	cac	tac	agg	aga	ctg	agg		1585
Leu	Leu	Leu	Leu	Arg	Trp	Gln	Phe	Pro	Ala	His	Tyr	Arg	Arg	Leu	Arg		
510				515						520				525			
cat	gcc	ctg	tgg	ccc	tca	ctt	cca	gac	ctg	cac	cgg	gtc	cta	ggc	cag		1633
His	Ala	Leu	Trp	Pro	Ser	Leu	Pro	Asp	Leu	His	Arg	Val	Leu	Gly	Gln		

	530	535	540	
tac ctt agg gac act gca gcc ctg agc ccg ccc aag gcc aca gtc tca				1681
Tyr Leu Arg Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser				
	545	550	555	
gat acc tgt gaa gaa gtg gaa ccc agc ctc ctt gaa atc ctc ccc aag				1729
Asp Thr Cys Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys				
	560	565	570	
tcc tca gag agg act cct ttg ccc ctg tgt tcc tcc cag gcc cag atg				1777
Ser Ser Glu Arg Thr Pro Leu Pro Leu Cys Ser Ser Gln Ala Gln Met				
	575	580	585	
gac tac cga aga ttg cag cct tct tgc ctg ggg acc atg ccc ctg tct				1825
Asp Tyr Arg Arg Leu Gln Pro Ser Cys Leu Gly Thr Met Pro Leu Ser				
	590	595	600	605
gtg tgc cca ccc atg gct gag tca ggg tcc tgc tgt acc acc cac att				1873
Val Cys Pro Pro Met Ala Glu Ser Gly Ser Cys Cys Thr Thr His Ile				
	610	615	620	
gcc aac cat tcc tac cta cca cta agc tat tgg cag cag cct tga				1918
Ala Asn His Ser Tyr Leu Pro Leu Ser Tyr Trp Gln Gln Pro				
	625	630	635	
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Pro Gln Asn Leu Ala Gln Val Ser Ser Gln Asp Val Ser Leu Leu Ala				
	20	25	30	
Ser Asp Ser Glu Pro Leu Lys Cys Phe Ser Arg Thr Phe Glu Asp Leu				
	35	40	45	
Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly Thr Tyr Gln				
	50	55	60	
Leu Leu Tyr Ala Tyr Pro Arg Glu Lys Pro Arg Ala Cys Pro Leu Ser				
65	70	75	80	
Ser Gln Ser Met Pro His Phe Gly Thr Arg Tyr Val Cys Gln Phe Pro				





Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asn Cys Glu Glu  
 325 330 335

Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe Ser Arg Cys  
 340 345 350

His Phe Lys Ser Arg Asn Asp Ser Ile Ile His Ile Leu Val Glu Val  
 355 360 365

Thr Thr Ala Pro Gly Thr Val His Ser Tyr Leu Gly Ser Pro Phe Trp  
 370 375 380

Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His Trp Arg Glu  
 385 390 395 400

Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro Ser Ser Trp  
 405 410 415

Ala Ala Gln Glu Thr Cys Tyr Gln Leu Arg Tyr Thr Gly Glu Gly His  
 420 425 430

Gln Asp Trp Lys Val Leu Glu Pro Pro Leu Gly Ala Arg Gly Gly Thr  
 435 440 445

Leu Glu Leu Arg Pro Arg Ser Arg Tyr Arg Leu Gln Leu Arg Ala Arg  
 450 455 460

Leu Asn Gly Pro Thr Tyr Gln Gly Pro Trp Ser Ser Trp Ser Asp Pro  
 465 470 475 480

Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr  
 485 490 495

Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu  
 500 505 510

Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu  
 515 520 525

Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg  
 530 535 540

Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys  
545 550 555 560

Glu Glu Val Glu Pro Ser Leu Leu Glu Ile Leu Pro Lys Ser Ser Glu  
565 570 575

Arg Thr Pro Leu Pro Leu Cys Ser Ser Gln Ala Gln Met Asp Tyr Arg  
580 585 590

Arg Leu Gln Pro Ser Cys Leu Gly Thr Met Pro Leu Ser Val Cys Pro  
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Pro Met Ala Glu Ser Gly Ser Cys Cys Thr Thr His Ile Ala Asn His  
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Leu Leu Ala Pro Gln Asn Leu Ala Gln Val Ser Ser Gln Asp Val Ser  
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gag gac ctc act tgc ttc tgg gat gag gaa gag gca gcg ccc agt ggg 193  
Glu Asp Leu Thr Cys Phe Trp Asp Glu Glu Glu Ala Ala Pro Ser Gly  
50 55 60

aca tac cag ctg ctg tat gcc tac ccg cgg gag aag ccc cgt gct tgc 241  
Thr Tyr Gln Leu Leu Tyr Ala Tyr Pro Arg Glu Lys Pro Arg Ala Cys  
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Pro Leu Ser Ser Gln Ser Met Pro His Phe Gly Thr Arg Tyr Val Cys

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cag ttt cca gac cag gag gaa gtg cgt ctc ttc ttt ccg ctg cac ctc Gln Phe Pro Asp Gln Glu Glu Val Arg Leu Phe Phe Pro Leu His Leu 95 100 105			337
tgg gtg aag aat gtg ttc cta aac cag act cgg act cag cga gtc ctc Trp Val Lys Asn Val Phe Leu Asn Gln Thr Arg Thr Gln Arg Val Leu 110 115 120 125			385
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ctg cag ctg cgc agc gaa cct gat ggg atc tcc ctc ggt ggc tcc tgg Leu Gln Leu Arg Ser Glu Pro Asp Gly Ile Ser Leu Gly Gly Ser Trp 255 260 265			817
gga tcc tgg tcc ctc act gtg act gtg gac ctg cct gga gat gca gtg Gly Ser Trp Ser Leu Thr Val Thr Val Asp Leu Pro Gly Asp Ala Val 270 275 280 285			865
gca ctt gga ctg caa tgc ttt acc ttg gac ctg aag aat gtt acc tgt Ala Leu Gly Leu Gln Cys Phe Thr Leu Asp Leu Lys Asn Val Thr Cys 290 295 300			913
caa tgg cag caa cag gac cat gct agc tcc caa ggc ttc ttc tac cac Gln Trp Gln Gln Gln Asp His Ala Ser Ser Gln Gly Phe Phe Tyr His 305 310 315			961

agc agg gca cgg tgc tgc ccc aga gac agg tac ccc atc tgg gag aac	1009
Ser Arg Ala Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asn	
320 325 330	
tgc gaa gag gaa gag aaa aca aat cca gga cta cag acc cca cag ttc	1057
Cys Glu Glu Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe	
335 340 345	
tct cgc tgc cac ttc aag tca cga aat gac agc att att cac atc ctt	1105
Ser Arg Cys His Phe Lys Ser Arg Asn Asp Ser Ile Ile His Ile Leu	
350 355 360 365	
gtg gag gtg acc aca gcc ccg ggt act gtt cac agc tac ctg ggc tcc	1153
Val Glu Val Thr Thr Ala Pro Gly Thr Val His Ser Tyr Leu Gly Ser	
370 375 380	
cct ttc tgg atc cac cag gct gtg cgc ctc ccc acc cca aac ttg cac	1201
Pro Phe Trp Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His	
385 390 395	
tgg agg gag atc tcc agt ggg cat ctg gaa ttg gag tgg cag cac cca	1249
Trp Arg Glu Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro	
400 405 410	
tcg tcc tgg gca gcc caa gag acc tgt tat caa ctc cga tac aca gga	1297
Ser Ser Trp Ala Ala Gln Glu Thr Cys Tyr Gln Leu Arg Tyr Thr Gly	
415 420 425	
gaa ggc cat cag gac tgg aag gtg ctg gag ccg cct ctc ggg gcc cga	1345
Glu Gly His Gln Asp Trp Lys Val Leu Glu Pro Pro Leu Gly Ala Arg	
430 435 440 445	
gga ggg acc ctg gag ctg cgc ccg cga tct cgc tac cgt tta cag ctg	1393
Gly Gly Thr Leu Glu Leu Arg Pro Arg Ser Arg Tyr Arg Leu Gln Leu	
450 455 460	
cgc gcc agg ctc aac ggc ccc acc tac caa ggt ccc tgg agc tcg tgg	1441
Arg Ala Arg Leu Asn Gly Pro Thr Tyr Gln Gly Pro Trp Ser Ser Trp	
465 470 475	
tcg gac cca act agg gtg gag acc gcc acc gag acc gcc tgg atc tcc	1489
Ser Asp Pro Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser	
480 485 490	
ttg gtg acc gct ctg cat cta gtg ctg ggc ctc agc gcc gtc ctg ggc	1537
Leu Val Thr Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly	
495 500 505	
ctg ctg ctg ctg agg tgg cag ttt cct gca cac tac agg aga ctg agg	1585
Leu Leu Leu Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg	
510 515 520 525	
cat gcc ctg tgg ccc tca ctt cca gac ctg cac cgg gtc cta ggc cag	1633
His Ala Leu Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln	
530 535 540	



Asp Gln Glu Glu Val Arg Leu Phe Phe Pro Leu His Leu Trp Val Lys  
 100 105 110

Asn Val Phe Leu Asn Gln Thr Arg Thr Gln Arg Val Leu Phe Val Asp  
 115 120 125

Ser Val Gly Leu Pro Ala Pro Pro Ser Ile Ile Lys Ala Met Gly Gly  
 130 135 140

Ser Gln Pro Gly Glu Leu Gln Ile Ser Trp Glu Glu Pro Ala Pro Glu  
 145 150 155 160

Ile Ser Asp Phe Leu Arg Tyr Glu Leu Arg Tyr Gly Pro Arg Asp Pro  
 165 170 175

Lys Asn Ser Thr Gly Pro Thr Val Ile Gln Leu Ile Ala Thr Glu Thr  
 180 185 190

Cys Cys Pro Ala Leu Gln Arg Pro His Ser Ala Ser Ala Leu Asp Gln  
 195 200 205

Ser Pro Cys Ala Gln Pro Thr Met Pro Trp Gln Asp Gly Pro Lys Gln  
 210 215 220

Thr Ser Pro Ser Arg Glu Ala Ser Ala Leu Thr Ala Glu Gly Gly Ser  
 225 230 235 240

Cys Leu Ile Ser Gly Leu Gln Pro Gly Asn Ser Tyr Trp Leu Gln Leu  
 245 250 255

Arg Ser Glu Pro Asp Gly Ile Ser Leu Gly Gly Ser Trp Gly Ser Trp  
 260 265 270

Ser Leu Thr Val Thr Val Asp Leu Pro Gly Asp Ala Val Ala Leu Gly  
 275 280 285

Leu Gln Cys Phe Thr Leu Asp Leu Lys Asn Val Thr Cys Gln Trp Gln  
 290 295 300

Gln Gln Asp His Ala Ser Ser Gln Gly Phe Phe Tyr His Ser Arg Ala  
 305 310 315 320

Arg Cys Cys Pro Arg Asp Arg Tyr Pro Ile Trp Glu Asn Cys Glu Glu  
 325 330 335

Glu Glu Lys Thr Asn Pro Gly Leu Gln Thr Pro Gln Phe Ser Arg Cys  
 340 345 350

His Phe Lys Ser Arg Asn Asp Ser Ile Ile His Ile Leu Val Glu Val  
 355 360 365

Thr Thr Ala Pro Gly Thr Val His Ser Tyr Leu Gly Ser Pro Phe Trp  
 370 375 380

Ile His Gln Ala Val Arg Leu Pro Thr Pro Asn Leu His Trp Arg Glu  
 385 390 395 400

Ile Ser Ser Gly His Leu Glu Leu Glu Trp Gln His Pro Ser Ser Trp  
 405 410 415

Ala Ala Gln Glu Thr Cys Tyr Gln Leu Arg Tyr Thr Gly Glu Gly His  
 420 425 430

Gln Asp Trp Lys Val Leu Glu Pro Pro Leu Gly Ala Arg Gly Gly Thr  
 435 440 445

Leu Glu Leu Arg Pro Arg Ser Arg Tyr Arg Leu Gln Leu Arg Ala Arg  
 450 455 460

Leu Asn Gly Pro Thr Tyr Gln Gly Pro Trp Ser Ser Trp Ser Asp Pro  
 465 470 475 480

Thr Arg Val Glu Thr Ala Thr Glu Thr Ala Trp Ile Ser Leu Val Thr  
 485 490 495

Ala Leu His Leu Val Leu Gly Leu Ser Ala Val Leu Gly Leu Leu Leu  
 500 505 510

Leu Arg Trp Gln Phe Pro Ala His Tyr Arg Arg Leu Arg His Ala Leu  
 515 520 525

Trp Pro Ser Leu Pro Asp Leu His Arg Val Leu Gly Gln Tyr Leu Arg  
 530 535 540

Asp Thr Ala Ala Leu Ser Pro Pro Lys Ala Thr Val Ser Asp Thr Cys





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gtgcagctgg tgcagtctgg acctgaggtg aagaagcctg gggcctcagt gaaggtctcc 900
tgcaaggctt ctggatacac cttaccaaac tcctggatga actgggtgag gcagaggcct 960
ggaaagggtc ttgagtgggt tggacggatt taccctggag atggagaaac tatctacaat 1020
gggaaattca gggtcagagt cacgattacc gcggacgaat ccacgagcac agcctacatg 1080
gagctgagca gcctgagatc tgaggacacg gccgtgtatt actgtgcgag aggctatgat 1140
gattactcgt ttgcttactg gggccagga accacggatc cagtctcttc aggtgggtgg 1200
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ctcctgcata gtaatggcaa cacttacttg tattggatcc tgcagaagcc agggcagctc 1380
ccacagctcc tgatctatcg gatgtccaac cttgcctcag gggccctga caggttcagt 1440
ggcagtgat caggcacagc ttttacctg aaaatcagca gagtggaggc tgaggatggt 1500
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ctggaatca aa 1572

```

<210> 254

<211> 524

<212> PRT

<213> Homo sapiens

<400> 254

```

Met Asp Trp Thr Trp Arg Phe Leu Phe Val Val Ala Ala Ala Thr Gly
1           5           10           15

```

```

Val Gln Ser Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys
          20           25           30

```

```

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
          35           40           45

```

```

Thr Asn Ser Trp Met Asn Trp Val Arg Gln Arg Pro Gly Lys Gly Leu
          50           55           60

```

```

Glu Trp Val Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn
65           70           75           80

```

```

Gly Lys Phe Arg Val Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser
          85           90           95

```

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val  
 100 105 110

Tyr Tyr Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly  
 115 120 125

Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Ala  
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg  
 165 170 175

Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr Trp  
 180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Arg Met  
 195 200 205

Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser  
 210 215 220

Gly Thr Ala Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val  
 225 230 235 240

Gly Val Tyr Tyr Cys Met Gln His Ile Glu Tyr Pro Phe Thr Phe Gly  
 245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly  
 260 265 270

Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Pro  
 275 280 285

Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser  
 290 295 300

Gly Tyr Thr Phe Thr Asn Ser Trp Met Asn Trp Val Arg Gln Arg Pro  
 305 310 315 320

Gly Lys Gly Leu Glu Trp Val Gly Arg Ile Tyr Pro Gly Asp Gly Glu  
 325 330 335

Thr Ile Tyr Asn Gly Lys Phe Arg Val Arg Val Thr Ile Thr Ala Asp  
 340 345 350

Glu Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu  
 355 360 365

Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe  
 370 375 380

Ala Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly  
 385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met  
 405 410 415

Thr Gln Ser Ala Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser  
 420 425 430

Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr  
 435 440 445

Tyr Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu  
 450 455 460

Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser  
 465 470 475 480

Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Lys Ile Ser Arg Val Glu  
 485 490 495

Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Ile Glu Tyr Pro  
 500 505 510

Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 515 520

<210> 255  
 <211> 354  
 <212> DNA  
 <213> Homo sapiens

<400> 255  
caggtgcagc tgggtgcagtc tggacctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
tcctgcaagg cttctggata caccttcacc aactcctgga tgaactgggt gaggcagagg 120  
cctggaaagg gtcttgagtg ggttggacgg atttatcctg gagatggaga aactatctac 180  
aatgggaaat tcagggtcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagaggctat 300  
gatgattact cgtttgctta ctggggccag ggaaccacgg tcaccgtctc ttca 354

<210> 256  
<211> 118  
<212> PRT  
<213> Homo sapiens

<400> 256

Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Ser  
20 25 30

Trp Met Asn Trp Val Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp Val  
35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe  
50 55 60

Arg Val Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr  
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
85 90 95

Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
100 105 110

Thr Val Thr Val Ser Ser  
115

<210> 257  
<211> 336  
<212> DNA

<213> Homo sapiens

<400> 257

```

gatattgtga tgactcagtc tgcactctcc ctgcccgtca ccctggaga gccggcctcc      60
atctcctgca ggtctagtaa gagtctcctg catagtaatg gcaacactta cttgtattgg      120
tacctgcaga agccagggca gtctccacag ctctgatct atcggatgtc caaccttgcc      180
tcaggggtcc ctgacaggtt cagtggcagt ggatcaggca cagcttttac actgaaaatc      240
agcagagtgg aggctgagga tgttgggggtt tattactgca tgcaacatat agaatacct      300
tttacgttcg gccaagggac caaactggaa atcaaa                                  336

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<210> 258

<211> 112

<212> PRT

<213> Homo sapiens

<400> 258

```

Asp Ile Val Met Thr Gln Ser Ala Leu Ser Leu Pro Val Thr Pro Gly
1           5           10           15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser
          20           25           30

Asn Gly Asn Thr Tyr Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Ser
          35           40           45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro
          50           55           60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Lys Ile
65           70           75           80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His
          85           90           95

Ile Glu Tyr Pro Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
          100          105          110

```

<210> 259

<211> 1572

<212> DNA

<213> Homo sapiens

<400> 259

atggactgga cctggaggtt cctctttgtg gtggcagcag ctacaggtgt ccagtcccag	60
gtgcagctgg tgcagtctgg acctgaggtg aagaagcctg gggcctcagt gaaggtctcc	120
tgcaaggctt ctggatacac cttcaccaac tcctggatga actggatcag gcagaggcct	180
ggaaagggtc ttgagtggat tggacggatt tatcctggag atggagaaac tatctacaat	240
gggaaattca gggtcagagt cacgattacc gcggacgaat ccacgagcac agcctacatg	300
gagctgagca gcctgagatc tgaggacacg gccgtgtatt actgtgcgag aggctatgat	360
gattactcgt ttgcttactg gggccagggg accctgggtca ccgtctcttc aggtggtggt	420
ggatccggag gtggtggatc ggggtggtgga ggatcggata ttgtgatgac tcagtctgca	480
ctctccctgc ccgtcacccc tggagagccg gcctccatct cctgcaggtc tagtaagagt	540
ctcctgcata gtaatggcaa cacttacttg tattggtacc tgcagaagcc agggcagtct	600
ccacagctcc tgatctatcg gatgtccaac cttgcctcag gggccctga caggttcagt	660
ggcagtggat caggcacagc ttttactctg aaaatcagca gagtggaggc tgaggatggt	720
ggggtttatt actgcatgca acatatagaa tatcctttta cgttcggcca agggacaaa	780
ctggaaatca aaggaggtgg tggatcgggt ggtggtggtt cgggagggcg tggatcgcag	840
gtgcagctgg tgcagtctgg acctgaggtg aagaagcctg gggcctcagt gaaggtctcc	900
tgcaaggctt ctggatacac cttcaccaac tcctggatga actggatcag gcagaggcct	960
ggaaagggtc ttgagtggat tggacggatt tatcctggag atggagaaac tatctacaat	1020
gggaaattca gggtcagagt cacgattacc gcggacgaat ccacgagcac agcctacatg	1080
gagctgagca gcctgagatc tgaggacacg gccgtgtatt actgtgcgag aggctatgat	1140
gattactcgt ttgcttactg gggccagggg accctgggtca ccgtctcttc aggtggtggt	1200
ggatccggag gtggtggatc ggggtggtgga ggatcggata ttgtgatgac tcagtctgca	1260
ctctccctgc ccgtcacccc tggagagccg gcctccatct cctgcaggtc tagtaagagt	1320
ctcctgcata gtaatggcaa cacttacttg tattggtacc tgcagaagcc agggcagtct	1380
ccacagctcc tgatctatcg gatgtccaac cttgcctcag gggccctga caggttcagt	1440
ggcagtggat caggcacagc ttttactctg aaaatcagca gagtggaggc tgaggatggt	1500
ggggtttatt actgcatgca acatatagaa tatcctttta cgttcggcca agggacaaa	1560
ctggaaatca aa	1572

<211> 524  
 <212> PRT  
 <213> Homo sapiens

<400> 260

Met Asp Trp Thr Trp Arg Phe Leu Phe Val Val Ala Ala Ala Thr Gly  
 1 5 10 15

Val Gln Ser Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys  
 20 25 30

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 35 40 45

Thr Asn Ser Trp Met Asn Trp Ile Arg Gln Arg Pro Gly Lys Gly Leu  
 50 55 60

Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn  
 65 70 75 80

Gly Lys Phe Arg Val Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser  
 85 90 95

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val  
 100 105 110

Tyr Tyr Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly  
 115 120 125

Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
 130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Ala  
 145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg  
 165 170 175

Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr Trp  
 180 185 190

Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Arg Met  
 195 200 205



Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser  
 210 215 220

Gly Thr Ala Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val  
 225 230 235 240

Gly Val Tyr Tyr Cys Met Gln His Ile Glu Tyr Pro Phe Thr Phe Gly  
 245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly  
 260 265 270

Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Pro  
 275 280 285

Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser  
 290 295 300

Gly Tyr Thr Phe Thr Asn Ser Trp Met Asn Trp Ile Arg Gln Arg Pro  
 305 310 315 320

Gly Lys Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Glu  
 325 330 335

Thr Ile Tyr Asn Gly Lys Phe Arg Val Arg Val Thr Ile Thr Ala Asp  
 340 345 350

Glu Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu  
 355 360 365

Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe  
 370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Gly Gly Gly  
 385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met  
 405 410 415

Thr Gln Ser Ala Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser  
 420 425 430

Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr  
 435 440 445

Tyr Leu Tyr Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu  
 450 455 460

Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser  
 465 470 475 480

Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Lys Ile Ser Arg Val Glu  
 485 490 495

Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Ile Glu Tyr Pro  
 500 505 510

Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 515 520

<210> 261

<211> 354

<212> DNA

<213> Homo sapiens

<400> 261

caggtgcagc tgggtgcagtc tggacctgag gtgaagaagc ctggggcctc agtgaaggtc 60

tcttgcaagg cttctggata caccttcacc aactcctgga tgaactggat caggcagagg 120

cctggaaaagg gtcttgagtg gattggacgg atttatcctg gagatggaga aactatctac 180

aatgggaaat tcagggtcag agtcacgatt accgcggacg aatccacgag cacagcctac 240

atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagaggctat 300

gatgattact cgtttgctta ctggggccag ggaaccctgg tcaccgtctc ttca 354

<210> 262

<211> 118

<212> PRT

<213> Homo sapiens

<400> 262

Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Ser  
 20 25 30

Trp Met Asn Trp Ile Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe  
 50 55 60

Arg Val Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr  
 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Leu Val Thr Val Ser Ser  
 115

<210> 263  
 <211> 1572  
 <212> DNA  
 <213> Mus musculus

<400> 263  
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 gttcagctgc agcagctctgg acctgagctg gtgaagcctg gggcctcagt gaagatttcc 120  
 tgcaaggctt ctggctatgc attcactaac tcttgatga actgggtgaa gcagaggcct 180  
 ggaaagggtc ttgagtggat tggacggatt tatcctggag atggagaaac tatctacaat 240  
 gggaaattca gggtaaggc cacactgact gcagacaaat cctccagcac agcctacatg 300  
 gatatcagca gcctgacatc tgaggactct gcggtctact tctgtgcaag aggctatgat 360  
 gattactcgt ttgcttactg gggccaaggg actctgggtca ctgtctctgc aggtgggtgg 420  
 ggttcgggtg gtggtggttc ggggtggggc ggatcggata ttgtgatgac tcaggctgca 480  
 ccctctatac ctgtcactcc tggagagtca gtatccatct cctgtaggtc tagtaagagt 540  
 ctctgcata gtaatggcaa cacttacttg tattgggtcc tgcagaggcc aggccagtct 600  
 cctcaactcc tgatatatcg gatgtccaac cttgcctcag gagtcccaga taggttcagt 660  
 ggcagtgggt caggaactgc tttcacactg agaatcagta gagtggaggc tgaggatgtg 720  
 ggtgtttatt actgtatgca acatatagaa tctcctttta cgttcggatc ggggaccaag 780

ctggaaataa aaggaggtgg tggatcgggt ggtggtggtt cgggaggcgg tggatcgcag 840  
 gttcagctgc agcagtctgg acctgagctg gtgaagcctg gggcctcagt gaagatttcc 900  
 tgcaaggctt ctggctatgc attcactaac tcctggatga actgggtgaa gcagaggcct 960  
 ggaaagggtc ttgagtggat tggacggatt taccctggag atggagaaac tatctacaat 1020  
 gggaaattca gggcaaggc cacactgact gcagacaaat cctccagcac agcctacatg 1080  
 gatatcagca gcctgacatc tgaggactct gcggtctact tctgtgcaag aggctatgat 1140  
 gattactcgt ttgcttactg gggccaaggg actctgggtca ctgtctctgc aggtggtggt 1200  
 ggttcgggtg gtggtggttc ggggtggtggc ggatcggata ttgtgatgac tcaggctgca 1260  
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 ctctgcata gtaatggcaa cacttacttg tattgggttcc tgcagaggcc aggccagtct 1380  
 cctcaactcc tgatatatcg gatgtccaac cttgcctcag gaggcccaga taggttcagt 1440  
 ggagtggtg caggaactgc tttcacactg agaatcagta gaggggaggc tgaggatgtg 1500  
 ggtgtttatt actgtatgca acatatagaa taccctttta cgttcggatc ggggaccaag 1560  
 ctggaaataa aa 1572

<210> 264

<211> 524

<212> PRT

<213> Mus musculus

<400> 264

Met Glu Trp Pro Leu Ile Phe Leu Phe Leu Leu Ser Gly Thr Ala Gly  
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Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Lys  
 20 25 30

Pro Gly Ala Ser Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Ala Phe  
 35 40 45

Thr Asn Ser Trp Met Asn Trp Val Lys Gln Arg Pro Gly Lys Gly Leu  
 50 55 60

Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn  
 65 70 75 80

Gly Lys Phe Arg Val Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser

				85					90					95			
Thr	Ala	Tyr	Met	Asp	Ile	Ser	Ser	Leu	Thr	Ser	Glu	Asp	Ser	Ala	Val		
			100					105						110			
Tyr	Phe	Cys	Ala	Arg	Gly	Tyr	Asp	Asp	Tyr	Ser	Phe	Ala	Tyr	Trp	Gly		
		115					120					125					
Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ala	Gly	Gly	Gly	Gly	Ser	Gly	Gly		
	130					135						140					
Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met	Thr	Gln	Ala	Ala		
145					150					155					160		
Pro	Ser	Ile	Pro	Val	Thr	Pro	Gly	Glu	Ser	Val	Ser	Ile	Ser	Cys	Arg		
				165					170					175			
Ser	Ser	Lys	Ser	Leu	Leu	His	Ser	Asn	Gly	Asn	Thr	Tyr	Leu	Tyr	Trp		
			180					185					190				
Phe	Leu	Gln	Arg	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu	Ile	Tyr	Arg	Met		
		195					200					205					
Ser	Asn	Leu	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser	Gly	Ser	Gly	Ser		
	210					215					220						
Gly	Thr	Ala	Phe	Thr	Leu	Arg	Ile	Ser	Arg	Val	Glu	Ala	Glu	Asp	Val		
225					230					235					240		
Gly	Val	Tyr	Tyr	Cys	Met	Gln	His	Ile	Glu	Tyr	Pro	Phe	Thr	Phe	Gly		
				245					250					255			
Ser	Gly	Thr	Lys	Leu	Glu	Ile	Lys	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly		
			260					265					270				
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gln	Val	Gln	Leu	Gln	Gln	Ser	Gly	Pro		
		275					280					285					
Glu	Leu	Val	Lys	Pro	Gly	Ala	Ser	Val	Lys	Ile	Ser	Cys	Lys	Ala	Ser		
	290					295					300						
Gly	Tyr	Ala	Phe	Thr	Asn	Ser	Trp	Met	Asn	Trp	Val	Lys	Gln	Arg	Pro		
305					310					315					320		

Gly Lys Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Glu  
 325 330 335

Thr Ile Tyr Asn Gly Lys Phe Arg Val Lys Ala Thr Leu Thr Ala Asp  
 340 345 350

Lys Ser Ser Ser Thr Ala Tyr Met Asp Ile Ser Ser Leu Thr Ser Glu  
 355 360 365

Asp Ser Ala Val Tyr Phe Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe  
 370 375 380

Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala Gly Gly Gly  
 385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met  
 405 410 415

Thr Gln Ala Ala Pro Ser Ile Pro Val Thr Pro Gly Glu Ser Val Ser  
 420 425 430

Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr  
 435 440 445

Tyr Leu Tyr Trp Phe Leu Gln Arg Pro Gly Gln Ser Pro Gln Leu Leu  
 450 455 460

Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser  
 465 470 475 480

Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Arg Ile Ser Arg Val Glu  
 485 490 495

Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Ile Glu Tyr Pro  
 500 505 510

Phe Thr Phe Gly Ser Gly Thr Lys Leu Glu Ile Lys  
 515 520

<210> 265

<211> 30

<212> PRT  
 <213> Homo sapiens

<400> 265

Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Ala  
 1                   5                   10                   15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr  
           20                   25                   30

<210> 266  
 <211> 5  
 <212> PRT  
 <213> Homo sapiens

<400> 266

Asn Ser Trp Met Asn  
 1                   5

<210> 267  
 <211> 14  
 <212> PRT  
 <213> Homo sapiens

<400> 267

Trp Val Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp Val Gly  
 1                   5                   10

<210> 268  
 <211> 17  
 <212> PRT  
 <213> Homo sapiens

<400> 268

Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe Arg  
 1                   5                   10                   15

Val

<210> 269  
 <211> 32  
 <212> PRT  
 <213> Homo sapiens

<400> 269

Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr Met Glu  
 1                   5                   10                   15

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg  
           20                   25                   30

<210> 270  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 270

Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr  
 1                   5

<210> 271  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 271

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
 1                   5                   10

<210> 272  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 272

Asp Ile Val Met Thr Gln Ser Ala Leu Ser Leu Pro Val Thr Pro Gly  
 1                   5                   10                   15

Glu Pro Ala Ser Ile Ser Cys  
           20

<210> 273  
 <211> 16  
 <212> PRT  
 <213> Homo sapiens

<400> 273

Arg Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr  
 1                   5                   10                   15

<210> 274



<211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 274

Trp Tyr Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr  
 1                   5                   10                   15

<210> 275  
 <211> 7  
 <212> PRT  
 <213> Homo sapiens

<400> 275

Arg Met Ser Asn Leu Ala Ser  
 1                   5

<210> 276  
 <211> 32  
 <212> PRT  
 <213> Homo sapiens

<400> 276

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr  
 1                   5                   10                   15

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys  
                  20                   25                   30

<210> 277  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 277

Met Gln His Ile Glu Tyr Pro Phe Thr  
 1                   5

<210> 278  
 <211> 10  
 <212> PRT  
 <213> Homo sapiens

<400> 278

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 1                   5                   10

<210> 279  
 <211> 30  
 <212> PRT  
 <213> Homo sapiens

<400> 279

Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Ala  
 1                   5                   10                   15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr  
           20                   25                   30

<210> 280  
 <211> 5  
 <212> PRT  
 <213> Homo sapiens

<400> 280

Asn Ser Trp Met Asn  
 1                   5

<210> 281  
 <211> 14  
 <212> PRT  
 <213> Homo sapiens

<400> 281

Trp Ile Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly  
 1                   5                   10

<210> 282  
 <211> 17  
 <212> PRT

<213> Homo sapiens

<400> 282

Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe Arg  
 1                   5                   10                   15

Val

<210> 283  
 <211> 32  
 <212> PRT

<213> Homo sapiens

<400> 283

Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr Met Glu  
1                   5                   10                   15

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg  
          20                   25                   30

<210> 284

<211> 9

<212> PRT

<213> Homo sapiens

<400> 284

Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr  
1                   5

<210> 285

<211> 11

<212> PRT

<213> Homo sapiens

<400> 285

Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser  
1                   5                   10

<210> 286

<211> 1572

<212> DNA

<213> Homo sapiens

<400> 286

atggactgga cctggagggt cctctttgtg gtggcagcag ctacaggtgt ccagtcccag       60  
gtgcagctgg tgcagtctgg acctgagggtg aagaagcctg gggcctcagt gaaggtctcc       120  
tgcaaggctt ctggatacac cttaccaaac tcctggatga actgggtgag gcagaggcct       180  
ggaaagggtc ttgagtggat tggacggatt tatcctggag atggagaaac tatctacaat       240  
gggaaattca gggtcagagt cacgattacc gcggacgaat ccacgagcac agcctacatg       300  
caactgagca gcctgagatc tgaggacacg gccgtgtatt actgtgcgag aggctatgat       360  
gattactcgt ttgcttactg gggccagga accacgggtca ccgtctcttc aggtggtggt       420  
ggatccggag gtggtggatc ggggtggtgga ggatcggata ttgtgatgac tcagtctcca       480  
ctctccctgc ccgtcacccc tggagagccg gcctccatct cctgcaggtc tagtaagagt       540

ctctgcata gtaatggcaa cacttacttg tattggttcc tgcagaagcc agggcagtct 600  
 ccacagctcc tgatctatcg gatgtccaac cttgcctcag gggtcctga caggttcagt 660  
 ggagctggat caggcacaga ttttactg aaaatcagca gagtggaggc tgaggatggt 720  
 ggggtttatt actgcatgca acatatagaa tatcctttta cgttcggcca agggaccaa 780  
 ctggaaatca aaggaggtgg tggatcgggt ggtggtggtt cgggagcgg tggatcgcag 840  
 gtgcagctgg tgcagtctgg acctgaggtg aagaagcctg gggcctcagt gaaggtctcc 900  
 tgcaaggctt ctggatacac cttaccaac tcttgatga actgggtgag gcagaggcct 960  
 ggaaagggtc ttgagtggat tggacggatt tatcctggag atggagaaac tatctacaat 1020  
 gggaaattca gggtcagagt cacgattacc gcggacgaat ccacgagcac agcctacatg 1080  
 caactgagca gcctgagatc tgaggacacg gccgtgtatt actgtgagcag aggctatgat 1140  
 gattactcgt ttgcttactg gggccagga accacggtca ccgtctcttc aggtggtggt 1200  
 ggatccggag gtggtggatc ggggtggtgga ggatcggata ttgtgatgac tcagtctcca 1260  
 ctctccctgc ccgtcaccct tggagagccg gcctccatct cctgcaggtc tagtaagagt 1320  
 ctctgcata gtaatggcaa cacttacttg tattggttcc tgcagaagcc agggcagtct 1380  
 ccacagctcc tgatctatcg gatgtccaac cttgcctcag gggtcctga caggttcagt 1440  
 ggagctggat caggcacaga ttttactg aaaatcagca gagtggaggc tgaggatggt 1500  
 ggggtttatt actgcatgca acatatagaa tatcctttta cgttcggcca agggaccaa 1560  
 ctggaaatca aa 1572

<210> 287

<211> 524

<212> PRT

<213> Homo sapiens

<400> 287

Met Asp Trp Thr Trp Arg Phe Leu Phe Val Val Ala Ala Ala Thr Gly  
 1 5 10 15

Val Gln Ser Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys  
 20 25 30

Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 35 40 45

Thr Asn Ser Trp Met Asn Trp Val Arg Gln Arg Pro Gly Lys Gly Leu  
50 55 60

Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn  
65 70 75 80

Gly Lys Phe Arg Val Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser  
85 90 95

Thr Ala Tyr Met Gln Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val  
100 105 110

Tyr Tyr Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly  
115 120 125

Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
130 135 140

Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro  
145 150 155 160

Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg  
165 170 175

Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr Trp  
180 185 190

Phe Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Arg Met  
195 200 205

Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser  
210 215 220

Gly Thr Asp Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val  
225 230 235 240

Gly Val Tyr Tyr Cys Met Gln His Ile Glu Tyr Pro Phe Thr Phe Gly  
245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly  
260 265 270

Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Pro

275	280	285																			
Glu	Val	Lys	Lys	Pro	Gly	Ala	Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser						
290						295						300									
Gly	Tyr	Thr	Phe	Thr	Asn	Ser	Trp	Met	Asn	Trp	Val	Arg	Gln	Arg	Pro						
305						310						315									
Gly	Lys	Gly	Leu	Glu	Trp	Ile	Gly	Arg	Ile	Tyr	Pro	Gly	Asp	Gly	Glu						
			325						330						335						
Thr	Ile	Tyr	Asn	Gly	Lys	Phe	Arg	Val	Arg	Val	Thr	Ile	Thr	Ala	Asp						
			340						345						350						
Glu	Ser	Thr	Ser	Thr	Ala	Tyr	Met	Gln	Leu	Ser	Ser	Leu	Arg	Ser	Glu						
			355						360						365						
Asp	Thr	Ala	Val	Tyr	Tyr	Cys	Ala	Arg	Gly	Tyr	Asp	Asp	Tyr	Ser	Phe						
370						375						380									
Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser	Gly	Gly	Gly						
385						390						395									
Gly	Ser	Gly	Gly	Gly	Gly	Ser	Gly	Gly	Gly	Gly	Ser	Asp	Ile	Val	Met						
				405						410						415					
Thr	Gln	Ser	Pro	Leu	Ser	Leu	Pro	Val	Thr	Pro	Gly	Glu	Pro	Ala	Ser						
			420						425						430						
Ile	Ser	Cys	Arg	Ser	Ser	Lys	Ser	Leu	Leu	His	Ser	Asn	Gly	Asn	Thr						
			435						440						445						
Tyr	Leu	Tyr	Trp	Phe	Leu	Gln	Lys	Pro	Gly	Gln	Ser	Pro	Gln	Leu	Leu						
450						455						460									
Ile	Tyr	Arg	Met	Ser	Asn	Leu	Ala	Ser	Gly	Val	Pro	Asp	Arg	Phe	Ser						
465						470						475									
Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Lys	Ile	Ser	Arg	Val	Glu						
				485						490						495					
Ala	Glu	Asp	Val	Gly	Val	Tyr	Tyr	Cys	Met	Gln	His	Ile	Glu	Tyr	Pro						
			500						505						510						

Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 515 520

<210> 288  
 <211> 354  
 <212> DNA  
 <213> Homo sapiens

<400> 288  
 cagggtgcagc tgggtgcagtc tggacctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
 tcctgcaagg cttctggata caccttcacc aactcctgga tgaactgggt gaggcagagg 120  
 cctggaaagg gtcttgagtg gattggacgg atttacctg gagatggaga aactatctac 180  
 aatgggaaat tcagggtcag agtcacgatt accgcgagc aatccacgag cacagcctac 240  
 atgcaactga gcagcctgag atctgaggac acggccgtgt attactgtgc gagaggctat 300  
 gatgattact cgtttgctta ctggggccag ggaaccacgg tcaccgtctc ttca 354

<210> 289  
 <211> 118  
 <212> PRT  
 <213> Homo sapiens

<400> 289

Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Ala  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Ser  
 20 25 30

Trp Met Asn Trp Val Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe  
 50 55 60

Arg Val Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr

100

105

110

Thr Val Thr Val Ser Ser  
115

&lt;210&gt; 290

&lt;211&gt; 336

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 290

gatattgtga tgactcagtc tccactctcc ctgcccgtca ccctggaga gccggcctcc 60  
atctcctgca ggtctagtaa gagtctcctg catagtaatg gcaacactta cttgtattgg 120  
ttcctgcaga agccagggca gtctccacag ctctgatct atcggatgtc caaccttgcc 180  
tcaggggtcc ctgacaggtt cagtggcagt ggatcaggca cagattttac actgaaaatc 240  
agcagagtgg aggctgagga tgttgggggtt tattactgca tgcaacatat agaatacct 300  
tttacgttcg gccaaggac caaactggaa atcaaaa 336

&lt;210&gt; 291

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 291

Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly  
1 5 10 15

Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Leu Gln Lys Pro Gly Gln Ser  
35 40 45

Pro Gln Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
85 90 95



Ile Glu Tyr Pro Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 100 105 110

<210> 292  
 <211> 1572  
 <212> DNA  
 <213> Homo sapiens

<400> 292  
 atggactgga cctggagggt cctctttgtg gtggcagcag ctacaggtgt ccagtcccag 60  
 gtgcagctgg tgcagtctgg acctgagggt aagaagcctg gggcctcagt gaaggtctcc 120  
 tgcaaggctt ctggatacac cttcaccaac tcctggatga actgggtgag gcagaggcct 180  
 ggaaagggtc ttgagtggat tggacggatt tatcctggag atggagaaac tatctacaat 240  
 gggaaattca gggtcagagt cacgattacc gcggacgaat ccacgagcac agcctacatg 300  
 gagctgagca gcctgagatc tgaggacacg gccgtgtatt actgtgagag aggctatgat 360  
 gattactcgt ttgcttactg gggccagggg accacgggtc cegtctcttc aggtgggtgg 420  
 ggatccggag gtggtggatc ggggtgggga ggatcggata ttgtgatgac tcagtctcca 480  
 ctctccctgc ccgtcacccc tggagagccg gcctccatct cctgcaggtc tagtaagagt 540  
 ctctgcata gtaatggcaa cacttacttg tattggttcc agcagaagcc agggcaggct 600  
 ccacggctcc tgatctatcg gatgtccaac cttgcctcag gggtcctga caggttcagt 660  
 ggcagtggat caggcacagc ttttactctg aaaatcagca gagtggaggc tgaggatggt 720  
 ggggtttatt actgcatgca acatatagaa taccctttta cgttcggcca agggaccaa 780  
 ctggaaatca aaggagggtg tggatcgggt ggtggtggtt cgggagcgg tggatcgcag 840  
 gtgcagctgg tgcagtctgg acctgagggt aagaagcctg gggcctcagt gaaggtctcc 900  
 tgcaaggctt ctggatacac cttcaccaac tcctggatga actgggtgag gcagaggcct 960  
 ggaaagggtc ttgagtggat tggacggatt tatcctggag atggagaaac tatctacaat 1020  
 gggaaattca gggtcagagt cacgattacc gcggacgaat ccacgagcac agcctacatg 1080  
 gagctgagca gcctgagatc tgaggacacg gccgtgtatt actgtgagag aggctatgat 1140  
 gattactcgt ttgcttactg gggccagggg accacgggtc cegtctcttc aggtgggtgg 1200  
 ggatccggag gtggtggatc ggggtgggga ggatcggata ttgtgatgac tcagtctcca 1260  
 ctctccctgc ccgtcacccc tggagagccg gcctccatct cctgcaggtc tagtaagagt 1320  
 ctctgcata gtaatggcaa cacttacttg tattggttcc agcagaagcc agggcaggct 1380  
 ccacggctcc tgatctatcg gatgtccaac cttgcctcag gggtcctga caggttcagt 1440

ggcagtggat caggcacagc ttttacctg aaaatcagca gaggggaggc tgaggatggt 1500  
 ggggtttatt actgcatgca acatatagaa tatectttta cgttcggcca aggacacaaa 1560  
 ctggaaatca aa 1572

<210> 293  
 <211> 524  
 <212> PRT  
 <213> Homo sapiens

<400> 293

Met Asp Trp Thr Trp Arg Phe Leu Phe Val Val Ala Ala Ala Thr Gly  
 1 5 10 15  
 Val Gln Ser Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys  
 20 25 30  
 Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 35 40 45  
 Thr Asn Ser Trp Met Asn Trp Val Arg Gln Arg Pro Gly Lys Gly Leu  
 50 55 60  
 Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn  
 65 70 75 80  
 Gly Lys Phe Arg Val Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser  
 85 90 95  
 Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val  
 100 105 110  
 Tyr Tyr Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly  
 115 120 125  
 Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly Gly Ser Gly Gly  
 130 135 140  
 Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met Thr Gln Ser Pro  
 145 150 155 160  
 Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser Ile Ser Cys Arg  
 165 170 175

Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr Tyr Leu Tyr Trp  
 180 185 190

Phe Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr Arg Met  
 195 200 205

Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser  
 210 215 220

Gly Thr Ala Phe Thr Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val  
 225 230 235 240

Gly Val Tyr Tyr Cys Met Gln His Ile Glu Tyr Pro Phe Thr Phe Gly  
 245 250 255

Gln Gly Thr Lys Leu Glu Ile Lys Gly Gly Gly Gly Ser Gly Gly Gly  
 260 265 270

Gly Ser Gly Gly Gly Gly Ser Gln Val Gln Leu Val Gln Ser Gly Pro  
 275 280 285

Glu Val Lys Lys Pro Gly Ala Ser Val Lys Val Ser Cys Lys Ala Ser  
 290 300

Gly Tyr Thr Phe Thr Asn Ser Trp Met Asn Trp Val Arg Gln Arg Pro  
 305 310 315 320

Gly Lys Gly Leu Glu Trp Ile Gly Arg Ile Tyr Pro Gly Asp Gly Glu  
 325 330 335

Thr Ile Tyr Asn Gly Lys Phe Arg Val Arg Val Thr Ile Thr Ala Asp  
 340 345 350

Glu Ser Thr Ser Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu  
 355 360 365

Asp Thr Ala Val Tyr Tyr Cys Ala Arg Gly Tyr Asp Asp Tyr Ser Phe  
 370 375 380

Ala Tyr Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser Gly Gly Gly  
 385 390 395 400

Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Asp Ile Val Met  
 405 410 415

Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly Glu Pro Ala Ser  
 420 425 430

Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser Asn Gly Asn Thr  
 435 440 445

Tyr Leu Tyr Trp Phe Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu  
 450 455 460

Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro Asp Arg Phe Ser  
 465 470 475 480

Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Lys Ile Ser Arg Val Glu  
 485 490 495

Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His Ile Glu Tyr Pro  
 500 505 510

Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
 515 520

<210> 294

<211> 354

<212> DNA

<213> Homo sapiens

<400> 294

cagggtgcagc tgggtgçagtc tggacctgag gtgaagaagc ctggggcctc agtgaaggtc 60  
 tcctgcaagg cttctggata caccttcacc aactcctgga tgaactgggt gaggcagagg 120  
 cctggaaagg gtcttgagtg gattggacgg atttatcctg gagatggaga aactatctac 180  
 aatgggaaat tcagggtcag agtcacgatt accgcggacg aatccacgag cacagcctac 240  
 atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gagaggctat 300  
 gatgattact cgtttgctta ctggggccag ggaaccacgg tcaccgtctc ttca 354

<210> 295

<211> 118

<212> PRT

<213> Homo sapiens

&lt;400&gt; 295

Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Ala  
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Asn Ser  
 20 25 30

Trp Met Asn Trp Val Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile  
 35 40 45

Gly Arg Ile Tyr Pro Gly Asp Gly Glu Thr Ile Tyr Asn Gly Lys Phe  
 50 55 60

Arg Val Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr  
 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ala Arg Gly Tyr Asp Asp Tyr Ser Phe Ala Tyr Trp Gly Gln Gly Thr  
 100 105 110

Thr Val Thr Val Ser Ser  
 115

&lt;210&gt; 296

&lt;211&gt; 336

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 296

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 ttccagcaga agccagggca ggctccacgg ctctgatct atcggatgtc caaccttgcc 180  
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&lt;210&gt; 297

&lt;211&gt; 112

&lt;212&gt; PRT

<213> Homo sapiens

<400> 297

Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly  
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Glu Pro Ala Ser Ile Ser Cys Arg Ser Ser Lys Ser Leu Leu His Ser  
20 25 30

Asn Gly Asn Thr Tyr Leu Tyr Trp Phe Gln Gln Lys Pro Gly Gln Ala  
35 40 45

Pro Arg Leu Leu Ile Tyr Arg Met Ser Asn Leu Ala Ser Gly Val Pro  
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr Leu Lys Ile  
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln His  
85 90 95

Ile Glu Tyr Pro Phe Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
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<210> 298

<211> 30

<212> PRT

<213> Homo sapiens

<400> 298

Gln Val Gln Leu Val Gln Ser Gly Pro Glu Val Lys Lys Pro Gly Ala  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr  
20 25 30

<210> 299

<211> 14

<212> PRT

<213> Homo sapiens

<400> 299

Trp Val Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp Ile Gly  
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<210> 300  
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 <213> Homo sapiens

<400> 300

Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr Met Gln  
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Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg  
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<210> 301  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 301

Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser  
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<210> 302  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 302

Asp Ile Val Met Thr Gln Ser Pro Leu Ser Leu Pro Val Thr Pro Gly  
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Glu Pro Ala Ser Ile Ser Cys  
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<210> 303  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 303

Trp Phe Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr  
 1                   5                   10                   15

<210> 304  
 <211> 32  
 <212> PRT

<213> Homo sapiens

<400> 304

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr  
1                   5                   10                   15

Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys  
          20                   25                   30

<210> 305

<211> 10

<212> PRT

<213> Homo sapiens

<400> 305

Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys  
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<210> 306

<211> 32

<212> PRT

<213> Homo sapiens

<400> 306

Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Ser Thr Ala Tyr Met Glu  
1                   5                   10                   15

Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys Ala Arg  
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<210> 307

<211> 15

<212> PRT

<213> Homo sapiens

<400> 307

Trp Phe Gln Gln Lys Pro Gly Gln Ala Pro Arg Leu Leu Ile Tyr  
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<211> 32

<212> PRT

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<400> 308



Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Ala Phe Thr  
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Leu Lys Ile Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys  
          20                   25                   30